

IMPORTANT BIRD AND BIODIVERSITY AREAS IN INDIA

Priority sites for Conservation

Revised and updated 2nd Edition Vol. I



IMPORTANT BIRD AND BIODIVERSITY AREAS IN INDIA

Priority sites for conservation

**Second Edition: Revised and Updated
Volume I**

Asad R. Rahmani, M. Zafar-ul Islam and Raju M. Kasambe

Maps prepared by

Mohit Kalra and Noor I. Khan

Team Members

Noor I. Khan, Siddesh Surve, Abhijit Malekar and Nandkishor Dudhe

Significant Contribution to this edition

**Anwaruddin Choudhury, Arvind Mishra, Ajai Saxena, Dhananjai Mohan, Himmat Singh
Pawar, Intesar Suhail, Khursheed Ahmad, Neeraj Srivastava, P.O. Nameer, Manoj Nair,
Mrutyumjaya Rao, Praveen, J., Sanjeeva Pandey, S. Subramanya, Satya Prakash**

Editors

Gayatri Ugra and Maithreyi, M.R.

Layout and Design

V. Gopi Naidu

With major sponsorship from
Pavillion Foundation, Singapore

Recommended citation:

Rahmani, A.R., Islam, M.Z. and Kasambe, R.M. (2016) Important Bird and Biodiversity Areas in India: Priority Sites for Conservation (Revised and updated). Bombay Natural History Society, Indian Bird Conservation Network, Royal Society for the Protection of Birds and BirdLife International (U.K.). Pp. 1992 + xii

© 2016 Authors.

Bombay Natural History Society,

Hornbill House, Shaheed Bhagat Singh Road, Mumbai-400001, INDIA.

Telephone: 0091-22-28429477 and 0091-22-22821811. Fax: 0091-22-22837615.

Email: info@bnhs.org; websites: www.bnhs.org and www.ibcn.in

Bombay Natural History Society in India is registered under Bombay Public Trust Act 1950: F244 (Bom) dated 06th July 1953.

ISBN: 978-93-84678-02-9

Cover Photographs: Design and collage by Gopi Naidu conceptualized by IBA Team.

First published: 2004 by IBCN: Bombay Natural History Society.

Second Revised Edition: 2016.

Printed by Akshata Arts Pvt Ltd. 22, A to Z Industrial Estate, G. Kadam Marg, Lower Parel, Mumbai 400 013. Published by the Bombay Natural History Society, Hornbill House, Shaheed Bhagat Singh Road, Mumbai 400 001.

Designed: V. Gopi Naidu.

Available from IBCN and BNHS website as given above.

Declaration:

This book is being uploaded on the IBCN website and the text can be used for educational purposes. The copyright of the photographs used in the book remains with the photographers as mentioned near each photograph and should not be used without their prior permission and consent.

Donations to BNHS are exempt under 80G and 35(1)(ii) of Income Tax Act, 1961.

The presentation of material in this book and geographical designations employed do not imply the expression of any opinion whatsoever on the part of IBCN and BNHS concerning the legal status of any state / country, territory or area, or concerning the delimitation of its frontiers or boundaries.

ASSAM

IN-AS



Assam has very high biodiversity and some of the well-known protected areas of the world. This is reflected in the number of IBAs (55), some of them considered as outstanding IBAs

It is believed that Assam (24° 09'–27° 58' N and 89° 42'–96° 01' E) is the anglicised version of 'Asom', the name the Ahoms gave to the country when they conquered it in the 13th century. Assam, known in ancient lore as Kamarupa, originally included in addition to present day Assam, parts of West Bengal and Bangladesh.

Assam has a geographical area of 78,438 sq. km, which constitutes 2.39% of the country's total area. The area has been reduced to one-third of its original size over the last 45 years due to bifurcation into other states. Topographically, the state can be divided into three parts, namely, the Brahmaputra Valley, the Barak Valley and the highlands. The first two parts are plain areas, while the highlands have Karbi Plateau and Barail Range. Assam is dominated by the Brahmaputra river which is c. 2900 km in length. Its drainage area is roughly 9,35,500 sq. km.

Assam is rich in mineral wealth such as oil, coal, limestone, refractory clay, dolomite and natural gas. But tea is the major industry. There are nearly 750 major tea estates in the state. Assam contributes 15.6% of the world's tea production and 55% of India's tea output. Assam is the first state in the country where oil was struck, in 1889 at Digboi. The state is the largest producer of the golden coloured 'muga' silk in the world.

There are many world famous protected areas in Assam such as Kaziranga National Park (NP), Manas NP and Nameri NP. Majuli Island is one of the largest river islands in the world, where many large colonies of the Lesser Adjutant *Leptoptilos javanicus* can be seen along with other interesting birds. Nagaon and Morigaon are two very important sites for the Greater Adjutant *Leptoptilos dubius*, where a large number of adjutants breed.

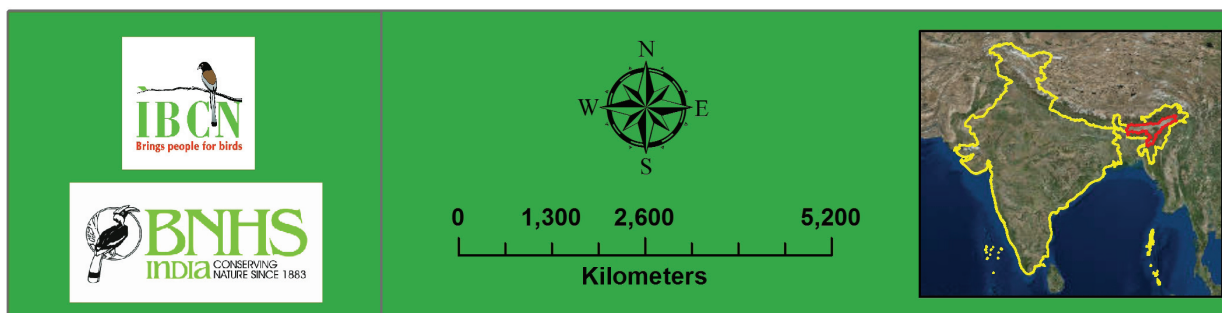
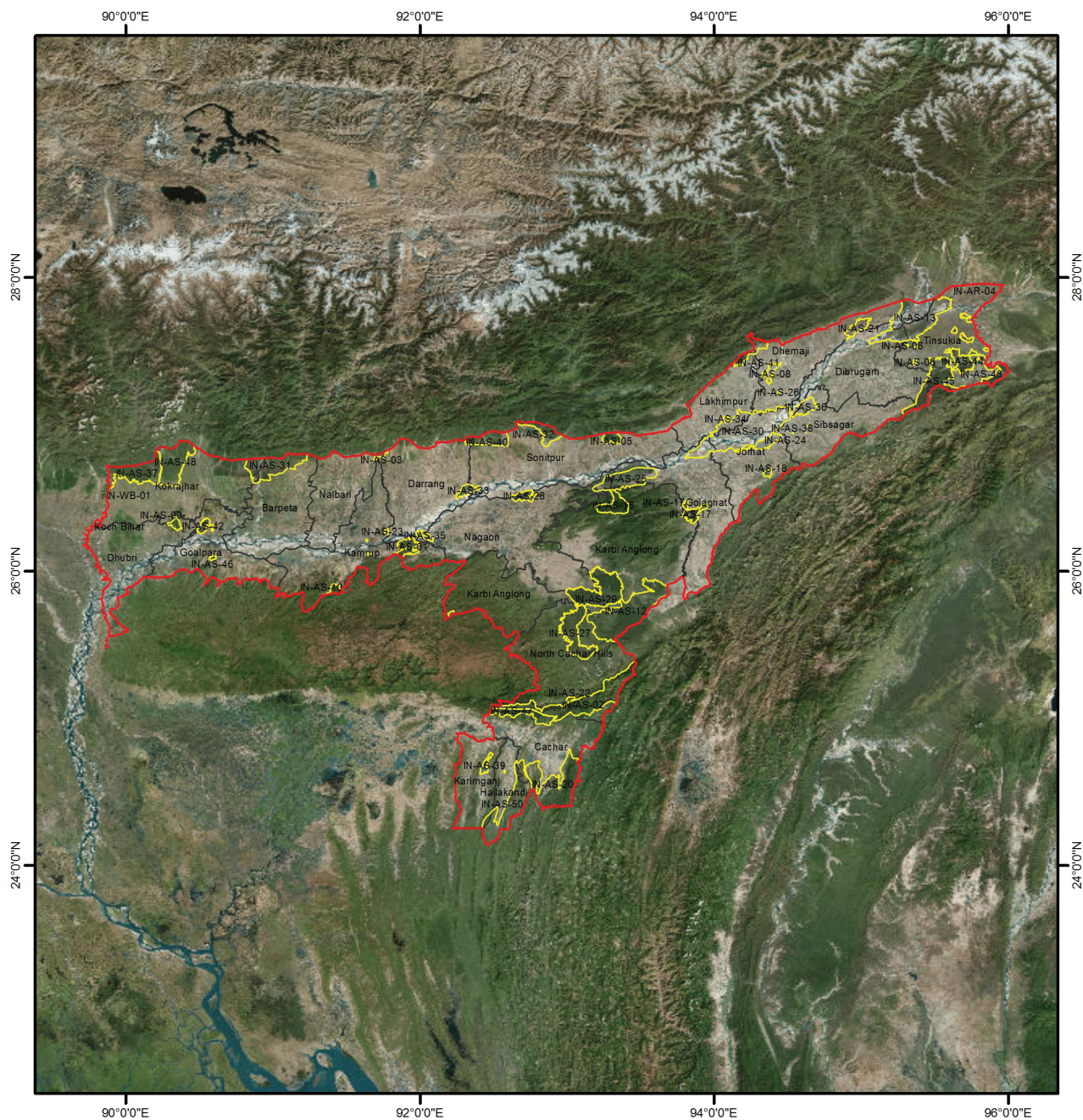
The human population of the state is 31.21 million (2.6% of the country's population) of which 85.90% is rural and 14.10% is urban (Census 2011). The average population density of the state is 398 persons per sq. km. Tribals constitute about 12.45% of the state's total population.

The climate of Assam is tropical monsoon with the mean annual rainfall varying from 1,500 mm to 4,000 mm. The mean annual temperature ranges between 5 °C to 37 °C.

Vegetation

The forest types occurring in the state are Tropical Wet Evergreen, Tropical Semi-evergreen, Tropical Moist Deciduous, Subtropical Broadleaf Hill, Subtropical Pine, and Littoral and Swamp Forests (Ministry of Environment and Forests 2011).

Important Bird Areas in Assam



In Assam, 293 species of orchids are reported which represent 44.39% of Northeast species and 24.42% of species occurring in India (State Biodiversity Board 2014). Mostly they are epiphytes. *Goodyera procera* and *Spiranthis sinensis* are adapted to aquatic habitat whereas *Vanilla piliifera* and *Galeola altissima* are climbers.

Fourteen species of cane are found in Assam: *Calamus flagellum*, *Calamus floribunadus* and *Calamus latifolius* are found widely distributed throughout Assam while *Plectocomia assamica* and *Plectocomia bractealis* are endemic species.

As per the Forest Survey of India report of 2011, the total recorded forest area is 29,253 sq. km which constitutes 37.29% of the total geographical area of the state and 3.70% of the country's forest cover. According to legal classification, the reserved forest constitutes 66.8% and unclassed forest

Barooah and Ahmed (2014) have brought out *Plant Diversity of Assam: A Checklist of Angiosperms and Gymnosperms*, in which they have enumerated 3,854 taxa under 1,394 genera and 236 families.

There are 165 species of plants that have restricted distribution to certain pockets in Assam, though some of them show extended distribution in the northeast region and elsewhere in India. However, about 100 such species have distribution restricted to Assam only. These include trees such as *Acacia gageana*, *Adiantum assamicum*, *Alseodaphne andersonii*, *Alseodaphne khasyana*, *Angiopteris assamica*, *Cedrela febrifuga*, *Cinnamomum cacharensis*, *Coelogyne assamica*, *Combretum wallichii*, *Dinorchloa indica*, *Diospyros cacharensis*, *Dipterocarpus mannii*, and *Eugenia cyanophylla*, bamboos such as *Bambusa cacharensis*,



Nearly 40 percent of Assam is still covered under forests but encroachment, edged by political exigencies, is a major problem

33.2% (Ministry of Environment and Forests 2011). Dense forest constitutes 1,343 sq. km, open forest 8,771 sq. km and moderate forest 9,724 sq. km. The state ranks eighth among all the Indian states in respect of area under forest cover (Ministry of Environment and Forests 2011). The decrease in forest cover of the state is due to encroachment in forest land, biotic pressure and shifting cultivation.

There are an estimated 3,513 *beels* and *hoars*, 1,85,623 ponds and tanks, and one reservoir in Assam. Deepor (also written as Dipor) beel near Guwahati is a Ramsar site. Some other wetlands of importance are Chandubi, Rata, Sohola, Taralipather, Phokolai, Mer, Sonbeel, Jamjing, Sagunpara, Motapung, Sarlane, Sareswar, Roumari, Khalihamari, Goranga, Sapekhati and Koladuar.

The flora of Assam as described by U.N. Kanjilal and his associates (1934–1940) remained the standard work for almost 50 years. In 2005, Prof. S. Choudhury compiled *Assam's Flora (Present Status of Vascular Plants)*. Recently,

Bambusa mastersii and *Chimonobambusa griffithiana*, and orchids such as *Bulbophyllum elassonotum*, and *Dendrobium assamicum*. *Dipterocarpus macrocarpus*, locally called Hollong, is the State Tree of Assam.

Assam's mammalian diversity is represented by 193 species. Most of them are widely distributed in this region and may be elsewhere in the northeast, but some of the species such as the One-horned Rhinoceros *Rhinoceros unicornis*, Wild Water Buffalo *Bubalus arnee*, Pygmy Hog *Porcula salvania*, Swamp Deer *Rucervus duvaucelii*, Golden Langur *Trachypithecus geei* and Western Hoolock Gibbon *Hoolock hoolock* have their distribution limited to isolated pockets and protected areas. One-horned Rhinoceros is the State Animal of Assam.

The distributional range of several Indo-Chinese fauna gets its sustenance from this region. Mention can be made of such species like Clouded Leopard *Neofelis nebulosa*, Marbled Cat *Pardofelis marmorata*, Asiatic Golden Cat *Catopuma*



Undisturbed low-land forest with secluded pools surrounded by old trees is the prime habitat of Endangered White-winged Duck

temminckii, Spotted Linsang *Prionodon pardicolor*, Large Indian Civet *Viverra zibetha*, Binturong *Arctictis binturong*, Burmese Ferret-badger *Melogale personata*, Hog Badger *Arctonyx collaris*, Hoary Bamboo Tat *Rhizomys pruinosus*, and Bay or Lesser Bamboo Rat *Cannomys badius*. Assam is home to all the primate species found in the northeast region. Many mammals of peninsular India, particularly those occurring in the Western Ghats, have close relationship with those found in Assam and Northeast region, and therefore undoubtedly Assam holds a key place in the evolutionary process of divergence of mammalian fauna in India.

Out of 15 Indian primate species, nine are found in Assam. Hoolock Gibbon, now sometimes split into two species is the only ape found in India. The other primate species are Golden Langur, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Northern Pig-tailed Macaque *Macaca leonina*, Stump-tailed Macaque *Macaca arctoides*, Assamese Macaque *Macaca assamensis*, and Bengal Slow Loris *Nycticebus bengalensis*. Golden Langur or ‘Sonali Bandar’ as it is known locally, is confined between the Sankosh river in the west, the Manas in the east, Brahmaputra in the south and mountains of Bhutan in the north. Pig-tailed macaque and Stump-tailed Macaque, locally known as ‘Gahorinejia Bandar’ and ‘Senduiria Bandar’, respectively, are distributed in the eastern, central and southern parts of the State. Rhesus Macaque, Capped Langur and Assamese Macaque are more or less distributed throughout the State. Assamese Macaque and Rhesus Macaques especially the latter are also found in villages

and in urban areas.

Slow Loris is the only prosimian found in Assam. Locally known as ‘Lajuki Bandar’, they are solitary animals and obligate canopy dwellers. Because of habitat loss, fragmentation and hunting, the primates are facing serious threat to their survival.

Assam and other parts of the region have 70 species of amphibians reported from the region. Out of the two recently described amphibians, *Gangenophis fulleri* is endemic to Assam and the Garo Hills, and Caecilian *Ichthyophis garoensis* is endemic to Assam and Meghalaya (Mathew & Sen 2009).

One-horned Rhinoceros in Assam

The total global population of the Vulnerable One-horned Rhinoceros in May 2007 was estimated to be 2,575 individuals, with a total of 378 in Nepal and 2,200 in India. The Rhino, with strict protection from Indian and Nepalese wildlife authorities, has recovered from a total population of below 200 in the early 1900s to over 3,000 in 2015. Although some populations have declined in recent years, overall there has been a population increase for almost 100 years, which still continues (Talukdar *et al.* 2015).

The species exists in several protected areas in Assam, with the following population estimates in 2013: Kaziranga National Park (2,200), Orang (60–70) and Pabitora (92) (Bibhab Talukdar *pers. comm.* 2014). Kaziranga National Park, which was established as a reserve for the last 10–20 Indian rhinos in Assam in 1905, is home to over 70% of the

Since the publication of the first volume in 2004, many surveys have been done and new data gathered. It was felt that some of the earlier IBAs were too large and covered 2–3 administrative districts, rendering administration difficult. Therefore, some IBAs have been split (e.g. Barail Range IN-AS-02, Inner Line, Kathakal and Barak Reserve Forests IN-AS-20) and at the same time new IBAs have been identified (e.g. Subankhanta, Sareswar Beel, Kapla Beel)

AVIFAUNA

Assam is extremely rich in bird life. Choudhury (2000) has listed 820 bird species from the state. These include some 280 migrants from the northern latitudes. This richness and

protected, the global status of such birds will be adversely affected.

White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *Gyps tenuirostris* Critically Endangered

Once common over large parts, both these species have experienced sharp population decline in the last two decades. Although still sighted sporadically in all the plain districts of the state, the number of birds seen is alarmingly low. This decline is projected to increase in the near future as a result of continued use of diclofenac as a veterinary medicines.



ASAD R. RAHMAN

Wet grasslands of the Brahmaputra floodplains are habitat to a large number of grassland-obligate species such as Bengal Florican, Swamp Francolin, Slender-billed Babbler, and Swamp Prinia

diversity in bird species is due to the fact that Northeast India, Assam in particular, is a meeting place of two zoogeographic sub-regions, the Indian and the Indo-Chinese, within the framework of the Oriental (or Indo-Malayan) Zoogeographic Region (Choudhury 2000). Assam is one of the Indian states where extensive work on bird life has been done by stalwarts such as E.C.S. Baker, A.O. Hume and in the recent times by A.U. Choudhury (see Choudhury 2000 and BirdLife International 2001 and the references therein).

THREATENED BIRDS FOR WHICH ASSAM IS SIGNIFICANT

Assam has many habitat types that are important for many globally threatened species, and some IBAs are crucial for the survival of threatened species. If these IBAs are not

In 2015, till March, more than a hundred vultures died after feasting on cattle carcasses poisoned with insecticide. These included 50 vulture deaths in Sibsagar district in January 2015 and 54 vulture deaths in two Upper Assam districts in March 2015. Since 2002, the poisoning is done by farmers and cattle owners. The sequence begins when the cattle owner loses his cattle or goat to dog bite. The cattle owner, blind with anger, decides to kill the dog. The chemicals, especially pesticides that are used in agriculture, are sprayed on the dead cattle to kill dogs. But, unfortunately, vultures feed on the poisoned carcass and die in large numbers. BNHS is conducting public awareness campaigns in Assam to develop a large areas as vulture safe zones for the future release of vultures being bred by BNHS and the Forest Department (Sachin Ranade, *pers. comm.* 2015).

IBAs of Assam		
IBA site codes	IBA site names	IBA criteria
IN-AS-01	Amchang Wildlife Sanctuary	A1
IN-AS-02	Barail Range	A1, A2, A3
IN-AS-03	Barnadi Wildlife Sanctuary	A1
IN-AS-04	Bauwwa <i>Beel</i>	A1
IN-AS-05	Behali Reserve Forest	A1, A3
IN-AS-06	Bherjan-Borajan-Podumoni Wildlife Sanctuary	A1
IN-AS-07	Bordoibam-Bilmukh Bird Sanctuary	A1
IN-AS-08	Bordoloni-Sampora	A1, A2, A4i
IN-AS-09	Chakrashila Complex	A1, A4i, A4iii
IN-AS-10	Chandubi Lake and adjoining areas	A1
IN-AS-11	Deobali Jalah	A1, A4i
IN-AS-12	Dhansiri Reserve Forest	A1, A4i
IN-AS-13	Dibru-Saikhowa Complex	A1, A2
IN-AS-14	Deepor <i>Beel</i> Sanctuary	A1, A4iii
IN-AS-15	Dum Duma-Dangori & Kumsong Reserve Forests	A1
IN-AS-16	East and North Karbi Anglong Wildlife Sanctuaries	A1
IN-AS-17	Garampani, Nambor and Doigrung	A1
IN-AS-18	Hollongapar Gibbon Sanctuary	A1
IN-AS-19	Habang and Umrú	A4ii
IN-AS-20	Inner Line (East), Katakhál and Barak Reserve Forests	A1
IN-AS-21	Jamjing and Sengajan	A1
IN-AS-22	Jatinga	A1, A4iv
IN-AS-23	Jengdia <i>Beel</i> and Satgaon	A1
IN-AS-24	Jhanjimukh-Kokilamukh	A1, A4i
IN-AS-25	Kaziranga National Park	A1, A2, A4i, A4iii
IN-AS-26	Kuarbari-Dalani	A1
IN-AS-27	Langting-Mupa Reserve Forest	A1
IN-AS-28	Laokhowa and Burhachapori Sanctuaries	A1, A2
IN-AS-29	Lumding Reserve Forest	A1
IN-AS-30	Majuli Island	A1, A4iii
IN-AS-31	Manas National Park	A1, A2
IN-AS-32	Nameri National Park	A1, A2
IN-AS-33	Orang National Park	A1, A4ii
IN-AS-34	Pabho Reserve Forest	A1, A2
IN-AS-35	Pobitora Wildlife Sanctuary	A1, A2, A4iii
IN-AS-36	Pani-Dihing Bird Sanctuary	A1, A4iii
IN-AS-37	Ripu Reserve Forest	A1, A2
IN-AS-38	Sibsagar Tanks	A1, A4i
IN-AS-39	Son <i>Beel</i>	A1
IN-AS-40	Sonai-Rupai Wildlife Sanctuary	A1
IN-AS-41	Subansiri Dulung	A1, A2
IN-AS-42	Tamaranga-Doloni-Bhairab Complex	A1, A4iii
IN-AS-43	Tirap-Burhidihing	A1
IN-AS-44	Upper Dihing (East) Complex	A1, A2
IN-AS-45	Upper Dihing (West) Complex	A1, A2
IN-AS-46	Urpod <i>Beel</i>	A1, A4iii
IN-AS-47	Barail Wildlife Sanctuary	A1, A2, A3
IN-AS-48	Chirang Reserve Forest	A1, A2
IN-AS-49	Dadara-Pasariya-Singimari	A1
IN-AS-50	Innerline (West) and Kathakál Reserve Forest	A1
IN-AS-51	Krungming Reserve Forest, Khorongma & Kopili-Umrangsu Reservoir	A1, A4ii
IN-AS-52	Maguri and Motapung Beels	A1, A2
IN-AS-53	Manas Reserve Forest	A1, A2
IN-AS-54	Marat Longri Wildlife Sanctuary	A1
IN-AS-55	Sareswer <i>Beel</i>	A1, A4iii

White-bellied Heron *Ardea insignis*

Critically Endangered

This heron qualifies as Critically Endangered because it has a very small, declining population. This decline is projected to increase in the near future as a result of the loss and degradation of lowland forests and wetlands

(BirdLife International 2014). In Assam, it is widely and thinly distributed in Dibru-Saikhowa National Park (Choudhury 1995a, 1998), Jamjing *beel* (Choudhury 1992), Manas National Park (Saikia and Bhattacharjee 1990; Kaziranga National Park (Saikia and Bhattacharjee 1993, Bhattacharjee *et al.* 1996), and Pobitora Wildlife Sanctuary

List of threatened birds with IBA site codes (These tables need to be checked with text)

CRITICALLY ENDANGERED

White-rumped Vulture, <i>Gyps bengalensis</i>	IN-AS-01, 04, 06, 07, 08, 09, 12, 13, 14, 15, 16, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 45, 46
Slender-billed Vulture <i>Gyps tenuirostris</i>	IN-AS-01, 06, 08, 09, 12, 13, 14, 15, 16, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46
White-bellied Heron, <i>Ardea insignis</i>	IN-AS-08, 13, 21, 25, 32, 35, 44, 45
Bengal Florican, <i>Houbaropsis bengalensis</i>	IN-AS-03, 13, 25, 28, 30, 31, 32, 33, 35, 37, 40, 41
Baer's Pochard, <i>Aythya baeri</i>	IN-AS-09, 13, 14, 24, 25, 28, 30, 33, 36, 38, 42
Red-headed Vulture, <i>Aegypius calvus</i>	IN-AS-05, 09, 21, 25, 31, 32, 33

ENDANGERED

Greater Adjutant, <i>Leptoptilos dubius</i>	IN-AS-01, 07, 08, 09, 11, 13, 14, 23, 24, 25, 26, 28, 30, 31, 33, 34, 35, 36, 37, 38, 42, 44
White-winged Duck, <i>Asarcornis scutulata</i>	IN-AS-02, 05, 12, 13, 15, 16, 17, 18, 20, 21(?), 22, 27, 29, 32, 40, 41, 43, 44, 45,
Spotted Greenshank, <i>Tringa guttifer</i>	IN-AS-13, 25, 28, 35
Green Peafowl (no recent record) <i>Pavo muticus</i>	IN-AS-12(?), 20(?), 29
Masked Finfoot (no recent record) <i>Heliopais personatus</i>	IN-AS-15, 20(?), 32, 43, 44
Black-bellied Tern, <i>Sterna acuticauda</i>	IN-AS-13, 24, 25, 28

VULNERABLE

Lesser Adjutant <i>Leptoptilos javanicus</i>	IN-AS-01, 02, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44, 45, 46
Lesser White-fronted Goose, <i>Anser erythropus</i>	IN-AS-25
Marbled Duck, <i>Marmaronetta angustirostris</i>	IN-AS-25
Pallas's Fish Eagle, <i>Haliaeetus leucoryphus</i>	IN-AS-07, 09, 10, 13, 14, 21, 23, 25, 28, 30, 32, 33, 35, 36, 41, 42
Greater Spotted Eagle, <i>Clanga clanga</i>	IN-AS-04, 07, 08, 09, 13, 14, 21, 24, 25, 28, 30, 31, 32, 34, 35, 36, 37, 39, 44
Eastern Imperial Eagle, <i>Aquila heliaca</i>	IN-AS-25, 32
Swamp Francolin, <i>Francolinus gularis</i>	IN-AS-02, 07, 08, 11, 13, 20(?), 21, 24, 25, 28, 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 41
Chestnut-breasted Hill-partridge, <i>Arborophila mandellii</i>	IN-AS-32, 41
Blyth's Tragopan, <i>Tragopan blythii</i>	IN-AS-02
Sarus Crane, <i>Grus antigone</i>	IN-AS-13
Indian Skimmer <i>Rynchops albicollis</i>	IN-AS-13, 25
Pale-capped Pigeon <i>Columba punicea</i>	IN-AS-13, 16, 25, 32, 44, 45
Rufous-necked Hornbill <i>Aceros nipalensis</i>	IN-AS-05, 12, 16, 22, 27, 31, 32, 37, 40, 41, 44, 45
Grey-sided Thrush <i>Turdus feae</i>	IN-AS-22
White-throated Bushchat <i>Saxicola insignis</i>	IN-AS-25, 31, 32, 37
Marsh Babbler <i>Pellorneum palustre</i>	IN-AS-13, 25, 28, 30, 31, 32, 35, 37
Tawny-breasted Wren-babbler <i>Spelaornis longicaudatus</i>	IN-AS-22
Snowy-throated Babbler <i>Stachyris oglei</i>	IN-AS-44
Jerdon's Babbler <i>Chrysomma altirostre</i>	IN-AS-13, 25, 30, 31, 37
Slender-billed Babbler <i>Turdoides longirostris</i>	IN-AS-25, 31, 32
Black-breasted Parrotbill <i>Paradoxornis flavirostris</i>	IN-AS-08(?), 13, 25, 30, 31, 34, 36, 37
Grey-crowned Prinia <i>Prinia cinereocapilla</i>	IN-AS-31, 32
Bristled Grass-bird <i>Chaetornis striata</i>	IN-AS-11, 31, 33
Beautiful Nuthatch <i>Sitta formosa</i>	IN-AS-22, 45
Yellow Weaver <i>Ploceus megarhynchus</i>	IN-AS-13, 25, 31, 33, 35

NEAR THREATENED		
Spot-billed Pelican <i>Pelecanus philippensis</i>	IN-AS-01, 04, 07, 08, 13, 14, 20(?), 21, 23, 24, 25, 26, 30, 31, 33, 34, 35, 36, 39	
Oriental Darter <i>Anhinga melanogaster</i>	IN-AS-07, 09, 12, 13, 14, 20, 21, 24, 25, 28, 29, 30, 31, 33, 35, 36, 38, 42, 44	
Painted Stork <i>Mycteria leucocephala</i>	IN-AS-07	
Black-necked Stork <i>Ephippiorhynchus asiaticus</i>	IN-AS-13, 14, 25, 28, 31, 33, 35, 36	
Black-headed Ibis <i>Threskiornis melanocephalus</i>	IN-AS-24, 25, 38	
Ferruginous Duck <i>Aythya nyroca</i>	IN-AS-07, 09, 11, 13, 14, 24, 25, 28, 30, 33, 35, 36, 38, 42, 44	
Grey-headed Fish-eagle <i>Ichthyophaga ichthyaetus</i>	IN-AS-13, 31	
Cinereous Vulture <i>Aegypius monachus</i>	IN-AS-13, 25, 31	
Pallid Harrier <i>Circus macrourus</i>	IN-AS-09, 31	
White-cheeked Partridge <i>Arborophila atrogularis</i>	IN-AS-25, 29, 44	
Blyth's Kingfisher <i>Alcedo hercules</i>	IN-AS-12, 13, 20, 25, 33, 44	
Great Pied Hornbill <i>Buceros bicornis</i>	IN-AS-05, 09, 12, 13, 20, 25, 27, 29, 31, 43, 44, 45	
Austen's Brown Hornbill <i>Anorrhinus austeni</i>	IN-AS-12, 20, 27, 43, 44, 45	
Rufous-vented Prinia <i>Prinia burnesii</i>	IN-AS-12, 13, 25	
Rufous-rumped Grassbird <i>Graminicola bengalensis</i>	IN-AS-25	
Chestnut-backed Laughingthrush <i>Dryonastes nuchalis</i>	IN-AS-44	
ENDEMIC BIRD AREA 130: EASTERN HIMALAYA		
Chestnut-breasted Hill-Partridge <i>Arborophila mandellii</i>	IN-AS-32, 41(?)	
Blyth's Tragopan <i>Tragopan blythii</i>	IN-AS-02	
Striped Laughingthrush <i>Trochalopteron virgatum</i>	IN-AS-02	
Brown-capped Laughingthrush <i>lanthocincla austeni</i>	IN-AS-02	
Rufous-throated Wren-babbler <i>Spelaornis caudatus</i>	IN-AS-32	
Tawny-breasted Wren-babbler <i>Spelaornis longicaudatus</i>	IN-AS-22	
Austen's Babbler <i>Stachyris oglei</i>	IN-AS-44	
Grey Sibia <i>Heterophasia gracilis</i>	IN-AS-02	
Beautiful Sibia <i>Heterophasia pulchella</i>	IN-AS-02	
White-naped Yuhina <i>Yuhina bakeri</i>	IN-AS-02	
Yellow-vented Leaf-warbler <i>Phylloscopus cantator</i>	IN-AS-02, 44, 45	
ENDEMIC BIRD AREA 131: ASSAM PLAINS		
Black-breasted Parrotbill <i>Paradoxornis flavirostris</i>	IN-AS-08 (?), 13, 25, 30, 31, 34 (?), 36, 37	
Marsh Babbler <i>Pellorneum palustre</i>	IN-AS-13, 25, 28, 30, 31, 32, 35, 37	
SECONDARY AREA S079: NORTH MYANMAR LOWLANDS		
Chestnut-backed Laughingthrush	<i>Dryonastes nuchalis</i>	IN-AS-44

(Saikia and Bhattacharjee 1990, 1993; Choudhury 2000; Barua *et al.* 1997, Barua 1998). Choudhury (2000) has compiled all the sight records, eight in all, five from the protected areas. It is difficult to estimate the total number of this highly secretive bird. However, there is little doubt that the population is very low and in grave danger due to habitat loss.

BNHS, ATREE, concerned individuals, and governmental and non-governmental bodies have joined hands to save this species and are working on developing a realistic and practical conservation strategy that will maximise the chances of ensuring the long-term persistence of viable populations of the heron. They are working on a range-wide strategy document that will help conserve the White-bellied Heron. The initiative is expected to enhance trans-boundary coordination among groups working for the conservation

of the species and guide donors with an interest in its conservation.

White-winged Duck *Cairina scutulata* Endangered

This forest duck qualifies as Endangered because it has a very small, rapidly declining, severely fragmented population as a result of deforestation, wetland drainage and exploitation (BirdLife International 2014). White-winged Duck is the State Bird of Assam and is called 'Deo Hans' in local language. This duck has been reported from the Dibru-Saikhowa NP (Choudhury 1996, Yahya 1994), Dangori Reserve Forest, Dum Duma Reserve Forest (Choudhury 1996, Yahya 1994, Talukdar and Bhattacharjee 1995), Jamjing, Kakojan Reserve Forest and Upper Dihing (East Block) Reserve Forest, (Choudhury 1996, Choudhury 2000), the



Black-breasted Parrotbill

DHRITIMAN MUKHERJEE



White-throated Bushchat

NIKHIL DEVASAR



Jerdon's Babbler

MOHAMMED IMRAN



Swamp Prinia

RANJAN KUMAR DAS

All these species are dependent on tall wet grasslands.

Burhi Dihing river (Buridihing river) (Green 1992), Upper Dihing (West Block) Reserve Forest (Pirie and Choudhury 1976, Choudhury 1996), Tirap Reserve Forest (Pirie and Choudhury 1976), Joypur Reserve Forest (Choudhury 1996), Nameri NP (the total population thought to be around 30 individuals, Choudhury 2000), Majuli *Beel*, Moriani Range (Mukherjee 1961), and North Cachar Hills (Green 1992). Recently, seven individuals were photographed by Ramki

Srinivasan in Nameri NP (<http://www.conservationindia.org/gallery/the-endangered-white-winged-wood-duck-nameri-assam>) as accessed on 21 June 2015).

Bengal Florican *Houbaropsis bengalensis*
Critically Endangered

This bustard has a very small, rapidly declining population largely as a result of the widespread loss of its grassland

habitat. It therefore qualifies as Critically Endangered (BirdLife International 2014). It has been reported from Amarapur (Choudhury 1996), Dibru-Saikhowa NP and Nameri NP (Choudhury 2000), Majuli Island, (Narayan 1992), Sonai-Rupai WLS (Choudhury 2000), Manas NP, Orang NP (Narayan and Rosalind 1990, Narayan 1992), Kaziranga NP (Rahmani *et al.* 1988), Burhachapori WLS and the adjacent Laokhowa WLS (Narayan and Rosalind 1990), and the Pabitora WLS. Recent studies by BNHS and Assam Forest Department show that it is still found in Kaziranga (32 adult males seen in 2014), Orang (5 adult males in 2014), Loakhowa-Burachapori (2 adult males in 2014) and few on chaporis of the Brahmaputra River (Rahmani *et al.* 2014). In Manas study, 32 adult males were noted by Sonali *et al.* (2014).

Greater Adjutant *Leptoptilos dubius* **Endangered**

Still widely but sparsely distributed throughout the Brahmaputra Valley, it is occasional in the Barak Valley and in the plain areas of the hill districts (Choudhury 2000). It has also been recorded from urban areas, for example Tezpur, Guwahati, Nagaon, Sivasagar and Dibrugarh. This stork qualifies as Endangered as it has a very small, declining population. This decline is projected to increase in the future based on current levels of exploitation, the effects of pollutants and continuing reduction in the availability of nesting sites and quality of feeding sites (BirdLife International 2014). Historically and sometimes even now it has been recorded from Dibru-Saikhowa NP (Choudhury 1995a, 1997), Pani Dihing Sanctuary (Saikia 1995, Rahmani *et al.* 1990), Majuli island, Jorhat district (Saikia 1995), Misamari, Sonitpur district (Saikia 1995), Burhachapori WLS (Choudhury 2000), Manas NP (Scott 1989, Anon. 1993), Nalbari, Darrang district (Rahmani *et al.* 1990, Saikia 1995), Orang NP, Darrang district (Rahmani *et al.* 1990, Changkakati and Das 1991), Kaziranga NP (Bhattacharjee *et al.* 1996), Chakrashila Wildlife Sanctuary (*Oriental Bird Club Bull.* 32: 12), Pabitora WLS (Choudhury 2000); Deepor (Dipor) *Beel* (Saikia and Bhattacharjee 1989), Sonapur, Nagaon district (Saikia 1995), Bordoibam-Bilmukh Sanctuary (Choudhury 2000), Laokhowa WLS (Rahmani *et al.* 1990; Choudhury 2000), Morigaon district (between Kamrup and Nagaon districts) (Saikia 1995) and Nagaon district (Changkakati and Das 1991).

The main problem for this species is lack of food during its breeding season due to over-fishing. Destruction of large nesting trees could also be impacting its population. In urban areas such as Guwahati, there are instances of electrocution by electric wires (Choudhury 2000). Only a tiny fraction of breeding takes place inside protected areas (e.g. Kaziranga), that too sporadic. Most nesting takes place in urban (e.g. Nagaon) or rural areas (e.g. Dadara), sometimes even on roadside trees.

The key threats are habitat destruction, including felling of nest-trees, drainage, conversion, pollution and over-exploitation of wetlands. Additionally, the reduced use of open rubbish dumps for the disposal of carcasses and foodstuffs may also contribute to its decline. It has been suggested that recent nesting failures in Assam may be due to disease (Goswami and Patar 2006), which may have a negative impact upon the species in the future. Young birds also get entangled in fishing nets and the species suffers from the disturbance of arboreal animals, competition for nesting habitat from the Lesser Adjutant *L. javanicus* and the exacerbation of persecution levels owing to its pest status (Mishra and Mandal 2009). In Guwahati pesticide use at open rubbish dumps where storks flocked to feed led to several mortalities in 2005. Singha and Rahmani (2006) have recommended expansion of conservation awareness programmes and developing a structured conservation breeding programme to support future reintroductions and population supplementation. We need to widely implement a policy of rescuing, rehabilitating and releasing chicks that fall from nests for natural reasons, like those during thunder storms.

Lesser Adjutant *Leptoptilos javanicus* **Vulnerable**

This stork qualifies as Vulnerable because it has a small, declining population as a result of habitat loss and degradation, hunting and disturbance (BirdLife International 2001, 2014). In Assam it is still widely seen in well-watered areas, large beels and many protected areas.

Pallas's Fish-Eagle *Haliaeetus leucoryphus* **Vulnerable**

This species is inferred to have a small, declining population as a result of widespread loss and degradation and disturbance of wetlands and breeding sites throughout its range. It therefore qualifies as Vulnerable (BirdLife International 2001, 2014). This species was once very common in the Brahmaputra valley, and remains fairly common in this area, with records from Dibru-Saikhowa NP (Choudhury 1995b, Choudhury 2000), Pani Dihing (Choudhury 1991, Choudhury 2000), Nameri NP (Talukdar and Das 1997), Manas NP (Rahmani *et al.* 1988, Choudhury 2000), Kaziranga NP (Samant *et al.* 1995, Barua and Sharma 1999) and Deepor *Beel*, (Choudhury 2000). Now the best population survives in Kaziranga NP where almost every large beel has a breeding pair. The breeding population is augmented by wintering birds.

Swamp Francolin *Francolinus gularis* **Vulnerable**

This species is classified as Vulnerable because it has undergone a rapid population decline which is projected to



Great One-horned Rhinoceros is an iconic animal of Assam and the state government has taken measures to reintroduce this magnificent animal in Manas and Laokhowa- Burachapori from where they had become extinct. Rhino Vision 20 20 aims to increase their numbers to more than 3,000 in Assam

continue, concurrent with the rapid decline in the extent and quality of its grassland habitat. Trapping for food and trade is an additional pressure (R. Bhargava *pers. comm.* 2002). In Assam it has been reported from Dibru-Saikhowa NP (Talukdar 1993, Choudhury 1995a), Manas NP (Rahmani *et al.* 1988), Orang NP (Javed *et al.* 1999), Kaziranga NP (Mukherjee 1977, Choudhury 2000), Laokhowa WLS (Javed *et al.* 1999), Burhachapori WLS (Choudhury 2000) and Pobitora WLS (BirdLife International 2001).

Slender-billed Babbler *Turdoides longirostris* **Vulnerable**

This elusive species is inferred to have a small, rapidly declining population because of the extensive destruction and degradation of its tall grassland habitats. It therefore qualifies as Vulnerable (BirdLife International 2001). In Assam it has been reported from Manas NP (Rahmani *et al.* 1988) and Kaziranga NP (Barua and Sharma 1999).

Black-breasted Parrotbill *Paradoxornis flavirostris* **Vulnerable**

This tall grassland specialist is inferred to have a small, rapidly declining population as a result of extensive loss and degradation of grasslands. It therefore qualifies as Vulnerable (BirdLife International 2001). In Assam it has been reported from Dibru-Saikhowa NP (Choudhury 1995a), and Kaziranga NP (Barua and Sharma 1999) and Manas National Park.

Yellow Weaver *Ploceus megarhynchus* **Vulnerable**

This species has a small, rapidly declining, severely fragmented population as a result of the loss and degradation of *terai* grasslands, principally owing to conversion to agriculture and overgrazing. These factors qualify it as Vulnerable (BirdLife International 2001). In Assam it has been reported from Manas NP 1987 (Rahmani *et al.* 1988), Kaziranga NP (Barua and Sharma 1999) and Orang National Park (Choudhury 2000).

Restricted Range species

Two Endemic Bird Areas, the Eastern Himalaya (EBA 130) and the Assam Plains (EBA 131), lie in Assam. The Eastern Himalaya EBA has 22 restricted range species and 13 of them are found in Assam. The Assam Plains EBA has 3 species and all of them are found in Assam. The Manipur Bush-quail *Perdica manipurensis* of this EBA has been found in only Manas National Park. Similarly, Hoary-throated Barwing *Actinodura nipalensis* and Streak-throated Barwing *Actinodura waldeni*, two species of EBA 130 that are present in Assam (Choudhury 2000), were not found in any IBA.

Biomes

Assam has three biomes: Biome 8 (Sino-Himalayan Subtropical Forest), Biome 9 (Indo-Chinese Tropical Moist Forest) and Biome 12 (Indo-Gangetic Plain). The list of biome species is too long to be mentioned here.

THREATS AND CONSERVATION ISSUES

Assam has many conservation problems, which the Forest Department, local NGOs such as Aaranyak, and IBCN partners are trying to minimise with the help of local people. Habitat destruction and modification is major and irreversible threat. As many as 42 out of 46 IBAs face this threat. The second most important threat is unsustainable exploitation of natural resources. This includes illegal felling, firewood collection, drainage and poaching. Disturbance to birds in the form of trapping and poaching, and during fishing operations is seen in most of the sites but particularly in 28 IBAs. Expansion of agricultural fields after illegally removing the natural vegetation, and slash-and-burn (*jhumming*) are seen in 26 IBAs. Excessive firewood collection is the major cause of concern in 19 IBAs of the state.

Illegal felling: Assam has 34.4% of its geographical area covered with forest (Ministry of Environment and Forest 2011). But this percentage is declining slowly because of deforestation. The illegal felling is mainly because of



Kaziranga National Park, now a Tiger Reserve, is a World Heritage Site and also an outstanding IBA



Assam is a land of butterflies. More than 400 species have been listed till now and many more to be discovered. The forests of Ultapani is famous for its butterfly diversity

increased human population. Forests are cleared to have more space for agricultural purposes, particularly affecting lowland forests, and this is taking place even within some protected areas. The habitats of many of the bird species are getting reduced because of this problem.

Firewood collection: Many of the protected areas are under severe pressure from the local people. They collect firewood regularly which causes great disturbance to many bird species.

Conversion of natural habitat to agriculture: One of the main threats is the continuing conversion of natural grassland and wetlands to agricultural and urban land-uses, together with agricultural intensification and industrialisation (Statthersfield *et al.* 1998). These habitats are now much reduced in area and also fragmented.

Shifting Cultivation: Unsustainable shifting cultivation in Assam could be made sustainable if people practiced it on a small scale using clearing cycles of 15–20 years. But in many areas increased population pressure has led to a rapid reduction in this cycle.

Encroachment: There has been extensive encroachment many IBA sites (some are protected areas) by people displaced during floods in the Brahmaputra river, erosion and inter-ethnic conflicts.

Poaching: Poaching is a major problem in Assam and all the northeastern states of India. Most of the poaching is done for waterbirds during October to February, when migratory birds arrive. The efforts of IBCN partners in collaboration with the Forest Department are making an impact on many of the IBA sites.

Pollution: Large areas in the state are used for tea cultivation. Most of the tea gardens and adjacent habitats are badly affected by insecticides. Similarly, wetlands are also affected by sewage and pesticides and waterbirds including migratory species are disappearing from many of these habitats.

REFERENCES

- Anonymous (1993) *Important fauna of Tiger Reserves*. New Delhi: Project Tiger, Ministry of Environment and Forests, Government of India.
- Barman, R., Saikia, P., Singha, H.J., Talukdar, B.K. and Bhattacharjee, P.C. (1995) Study on the population trend of waterbirds at Deepur Beel Wildlife Sanctuary, Assam. *Pavo* 33: 25–40.
- Barooah, C. and Ahmed, I. (2014) *Plant Diversity of Assam: A Checklist of Angiosperms and Gymnosperms*. Assam Science Technology and Environmental Council, Guwahati. Pp 599.
- Barua, M. (1998) Pobitora Wildlife Sanctuary. *Zoo's Print* 13(4): 9–10.
- Barua, M. and Sharma, P. (1999) Birds of Kaziranga National Park. *Forktail* 15: 47–60.
- Barua, M., Chettri, G.C. and Bardoloi, P. (1997) Endangered birds sighted in Pabitora Sanctuary. *Newsletter for Birdwatchers* 37: 109.
- Bhattacharjee, P.C., Saikia, P., Singh, H.J., Barman, R., Talukdar, B.K. and Baruah, M. (1996) Report on Kaziranga bird survey. Animal Ecology and Wildlife Biology Laboratory, Department of Zoology, Gauhati University, Guwahati. Unpubl..
- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- BirdLife (2014) <http://www.birdlife.org/> as accessed on December 01, 2014.
- Changkakati, H.C. and Das, R.K. (1991) Nesting habitat of Greater Adjutant Stork. *Indian Forester* 117: 892–895.
- Choudhury, A.U. (1991) Bird observations from Sibsagar District, Assam, India. *Forktail* 6: 35–42.
- Choudhury, A.U. (1992) Sighting of the Great White-bellied Heron in Jamjing Reserve Forest, Assam. *Newsletter for Birdwatchers* 32(7–8): 17.
- Choudhury, A.U. (1993) Nesting colonies of Greater Adjutant Storks in Nagaon and Sibsagar districts of Assam. *Newsletter for Birdwatchers* 33: 47–48.





There are many grass-root conservation NGOs and individuals in Assam working for protection of environment (above). The IBAs of Assam have great potential of bird tourism. The IBCN/BNHS in collaboration of local NGOs has organized many capacity-building workshops (below).

- Choudhury, A.U. (1995a) A report on bird survey in Dibru-Saikhowa Wildlife Sanctuary, Assam, India. Report submitted to Oriental Bird Club.
- Choudhury, A.U. (1995b) Wildlife survey in Bherjan, Borajan and Podumoni Reserved Forests of Tinsukia District, Assam, with a proposal for a wildlife sanctuary. The Rhino Foundation for Nature in North-East India, Guwahati.
- Choudhury, A.U. (1996) Survey of the White-winged Duck and the Bengal Florican in Tinsukia District and adjacent areas of Assam and Arunachal Pradesh. The Rhino Foundation for Nature in North-East India, Guwahati.
- Choudhury, A.U. (1997) The status of birds of Dibru-Saikhowa Sanctuary, Assam, India. *Oriental Bird Club Bull.* 25: 27–31.
- Choudhury, A.U. (1998) Mammals, birds and reptiles of Dibru-Saikhowa Sanctuary, Assam, India. *Oryx* 32: 192–200.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and World Wide Fund for Nature-India, Guwahati.
- Choudhury, S. (2005) *Assam Flora (Present status of vascular plants)*. Assam Science Technology and Environmental Council, Guwahati.
- Das, R.K. (1991) Assam: the main breeding ground of Spotbilled Pelican. *Newsletter for Birdwatchers* 31(11–12): 12–13.
- Goswami, S.K. and Patar, P.J. (2007) *Fall in the number of Greater Adjutant nests in Nagaon, Assam, India*.

- Green, A.J. (1992) *The status and conservation of the White-winged Wood Duck* *Cairina scutulata*. International Waterfowl & Wetlands Research Bureau (Special Publication No. 17), Slimbridge, UK.
- Gosh, S., Brahma, N., Lahkar, B.P., Nath, A., and Basumatary, R. (2014) *Survey of Bengal Florican in Manas National Park*. Survey Report submitted to Field Directorate Tiger Project, Manas, Govt. of Assam. Pp. 22.
- Kahl, M.P. (1971) Observations on the breeding of storks in India and Ceylon. *JBNHS* 67: 453–461.
- Kanjilal, U.N., Kanjilal, P.C., Das, A. and De, R.N. (1934–1940) *Flora of Assam*, Vols. I–IV. Government of Assam, Shillong.
- Mathew, R. and Sen, N. (2009) Studies on Caecilians (Amphibia: Gymnophiona: Ichthyophiidae) of North East India with description of three new species of *Ichthyophis* from Garo hills, Meghalaya and additional information on *Ichthyophis garoensis* Pillai and Ravichandran, 1999. In: Director (ed.) Records of the Zoological Survey of India. Occasional Paper no. 172, Zoological Survey of India, Kolkata. Pp. 1–56.
- Ministry Of Environment and Forest (2001) State of Forest Report 2001. Forest Survey of India, Dehra Dun.
- Ministry of Environment and Forest (2011) State of Forest Report 2013. Forest Survey of India, Dehra Dun.
- Mishra, A. and Mandal, J.N. (2009) Discovery of a breeding ground of the Greater Adjutant *Leptoptilos dubius* and their conservation in the floodlands of Bihar, India. *JBNHS* 106(2): 190–197.
- Mukherjee, A.K. (1961) A report on the investigation of the status of the White-winged Wood-Duck in Assam and recommendations of a sanctuary for its protection. *Rec. Indian Mus.* 59: 471–478.
- Mukherjee, A.K. (1977) The Indian Swamp Partridge — some notes on its present status in tarai and duars. *Newsl. Zool. Surv. India* 3(1): 2–3.
- Narayan, G. (1992) Ecology, distribution and conservation of the Bengal Florican *Houbaropsis bengalensis* (Gmelin) in India. Ph.D. thesis, University of Bombay, Bombay.
- Narayan, G. and Rosalind, L. (1990) An introduction to the Bengal Florican. Pp.9–16. In: *Status and ecology of the Lesser and Bengal Floricans with reports on Jerdon's Courser and Mountain Quail*. Final Report. Bombay Natural History Society, Bombay.
- Pirie, A.H. and Choudhury, A.H. (1976) Assam Valley Wildlife Society White-winged Wood Duck Protection Scheme. Unpubl.
- Rahmani, A.R., Narayan, G. and Rosalind, L. (1990) Status of the Greater Adjutant Stork (*Leptoptilos dubius*) in the Indian subcontinent. *Colonial Waterbirds* 13: 138–142.
- Rahmani, A.R., Narayan, G., Sankaran, R. and Rosalind, L. (1988) *The Bengal Florican, status and ecology, annual report 1986–87*. Bombay Natural History Society, Bombay.
- Rahmani, A.R., Kalra, M., Shinde, N. and Khonsai, N. (2014): Studying movement pattern and dispersal of the Bengal Florican (*Houbaropsis bengalensis*): a Satellite Telemetry Pilot Project. Annual Report 2013-2014. Bombay Natural History Society, Mumbai. Pp. 40.
- Saikia, P. (1995) Ecobiology of adjutant storks with special reference to *Leptoptilos javanicus* (Horsfield) in the Brahmaputra valley, Assam. Ph.D. thesis, Gauhati University, Guwahati.
- Saikia, P. and Bhattacharjee, P.C. (1989) A study of the avifauna of Deepar Beel, a potential bird sanctuary of Assam. Pp.188–195. In: Parish, D. and Prentice R.C. (eds) *Wetland and waterfowl conservation in Asia*. Asian Wetland Bureau/International Waterfowl & Wetlands Research Bureau, Kuala Lumpur.

- Saikia, P. and Bhattacharjee, P.C. (1990) The present status of waders and other water birds of Brahmaputra Valley, Assam (India). *Stilt* 17: 65–70.
- Saikia, P. and Bhattacharjee, P.C. (1993) Status, diversity and decline of waterbirds in Brahmaputra valley, Assam, India. Pp.20–27. In: Verghese, A., Sridhar, S. and Chakravarthy, A.K (eds) *Bird conservation, strategies for the nineties and beyond*. Ornithological Society of India, Bangalore.
- Samant, J.S., Prakash, V. and Naoroji, R. (1995) *Ecology and behaviour of resident raptors with special reference to endangered species. Final report 1990–1993*. Bombay Natural History Society, Bombay.
- Scott, D.A. (ed.) (1989). *A Directory of Asian Wetlands*. IUCN, Gland, Switzerland and Cambridge, UK. Pp. xiv + 1181, 33 maps.
- Singha, H. and Rahmani, A.R. (2006) Ecology, population and conservation of Greater Adjutant *Leptoptilos dubius* in Assam, India. *JBNHS* 103(2–3): 264–269.
- Stattersfield, A.J., Crosby, M.J., Long, A.J. and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK.
- State Biodiversity Board (2014) Biodiversity of Assam. <http://asbb.gov.in/biodiversity.html>. As accessed on December 30, 2014.
- Talukdar, B.K. (1993) Birds of Jamuguri beel of Assam. *Newsletter for Birdwatchers* 33: 78–79.
- Talukdar, B.K. (1995) Spot-billed Pelican in Assam. *Oriental Bird Club Bull.* 22: 46–47.
- Talukdar, B.K. (1999): The status of Spot-billed Pelican in Assam, India. *Oriental Bird Club Bull.* 30: 13–14.
- Talukdar, B.K. and Bhattacharjee, P.C. (1995) White-winged Duck in Doomdooma Reserved Forest, Assam. *Threatened Waterfowl Res. Grp. Newsl.* 8: 18–19.
- Talukdar, B.K. and Das, R.K. (1997) Record of birds of prey in Nameri Wildlife Sanctuary, Assam. *Newsletter for Birdwatchers* 37: 50–51.
- Talukdar, B.K., Emslie, R., Bist, S.S., Choudhury, A., Ellis, S., Bonal, B.S., Malakar, M.C., Talukdar, B.N. & Barua, M. (2008) *Rhinoceros unicornis*. The IUCN Red List of Threatened Species 2008: e.T19496A8928657. <http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T19496A8928657.en>.
- Yahya, H.S.A. (1994) Status of the White-winged Wood Duck *Cairina scutulata* and its conservation priorities in India. *Brit. Ecol. Soc. Bull.* 25: 17–22.

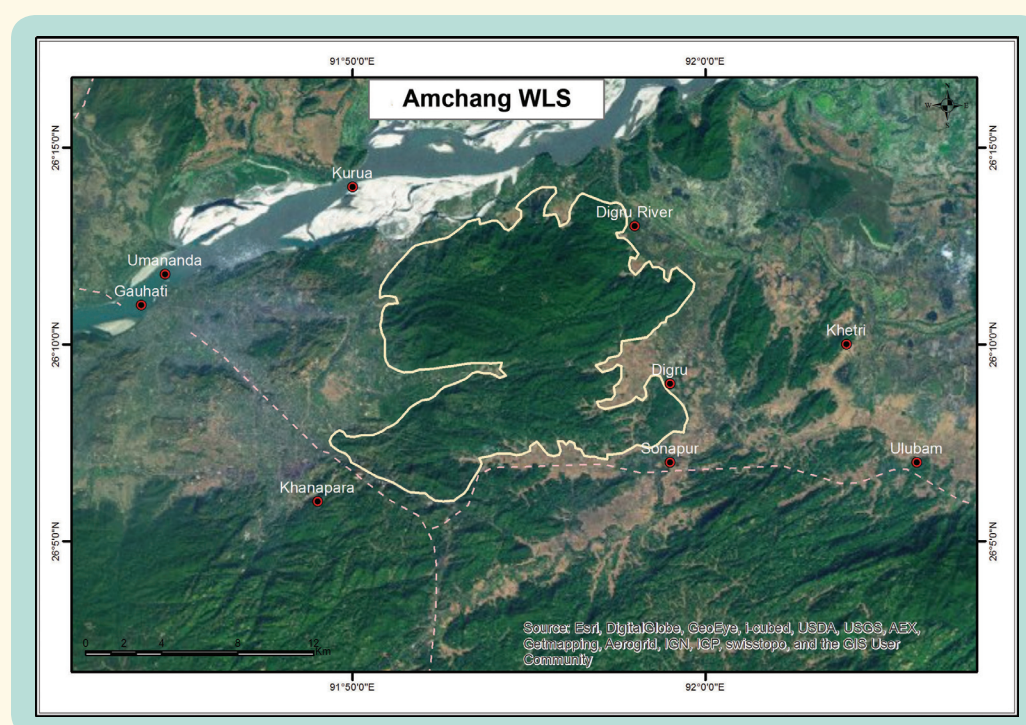
AMCHANG WILDLIFE SANCTUARY AND ADJOINING AREAS

IN-AS-01

IBA Site Code	: IN-AS-01	Altitude	: 50–569 msl
Administrative Region	: Assam	Rainfall	: 1,000–1,500 mm
(State)		Temperature	: 7 °C to 35 °C
District	: Kamrup Metropolitan	Biogeographic Zone	: Northeast
Coordinates	: 26° 06' 12" N, 91° 44' 60" E	Habitats	: Tropical Moist Deciduous Forest,
Ownership	: State		Tropical Semi-evergreen Forest,
Area	: 7,900 ha		Wetland

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Wildlife Sanctuary, established June, 2004.



GENERAL DESCRIPTION

Amchang (or Amcheng) Hills lie very close to Guwahati city, the capital of Assam. Besides being rich in flora and fauna, the area has the potential to become a permanent green belt at the eastern edge of this city with a population of about two million people. The site includes three Reserve Forests: Amchang (5,318 ha), South Amchang (1,550 ha), and Khanapara (996 ha), and a wetland called Khamranga Beel. The reserve forest areas were recommended for a wildlife sanctuary due to an almost isolated population of Asiatic Elephant *Elephas maximus* and Gaur *Bos gaurus* (Choudhury 1999, 2002a) and other species, and as a green belt for Guwahati (Choudhury 2002b). Considering its importance, the State Forest Department had prepared a proposal to declare it as a sanctuary (Barua 2003). In June,

2004, the Government of Assam declared three new wildlife sanctuaries, and Amchang was one of them (Choudhury 2005).

The area consists of low hills, which are part of a plateau. The lowest parts are about 50 m, near Khamranga Beel, while the highest point is 569 m (Parahopa Peak).

This IBA has a tropical climate, which may be called tropical monsoon type. The summer is hot and wet, while the winter is cool and dry.

The forest type is Tropical Moist Deciduous, with small pockets of Tropical Semi-evergreen. In the depressions, the herb *Alpinia allughas* and grasses *Arundo donax* and *Neyraudia reynaudiana* (both locally called *nal*) occur. Plantations of the Forest Department are mostly of Teak *Tectona grandis*.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
---------------------	-------------------------------

AVIFAUNA

A rich and diverse birdlife exists in the area. About 200 species have so far been recorded, while there could be more than 300 (A.U. Choudhury, *pers. comm.* 2014). The Greater Adjutant *Leptoptilos dubius* (Endangered) and Lesser Adjutant *L. javanicus* (Vulnerable) are regularly seen, both in the *beel* as well on the hills. In the latter area, they were seen in flight. The Critically Endangered White-rumped Vulture *Gyps bengalensis* and the Slender-billed Vulture *G. tenuirostris* were common till the mid-1990s, but are now rare. Nesting by the former species during the last decade was also reported (Mrigen Barua, *in litt.* 2003). The Spot-billed Pelican *Pelecanus philippensis* was a frequent visitor to Khamranga Beel but now it is occasional.

In winter, a very large number of migratory waterfowl are found in Khamranga Beel. With protection, their number could easily reach $\geq 20,000$ (A4iii criteria).

OTHER KEY FAUNA

The fauna in the area is exceptionally rich. Five species of primates have been confirmed: Western Hoolock Gibbon *Hoolock hoolock*, Slow Loris *Nycticebus bengalensis*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, and Assamese Macaque *M. assamensis*. There are reports of Pig-tailed Macaque *Macaca nemestrina leonina* and Stump-tailed Macaque *M. arctoides*. Other mammals include the Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Gaur *Bos gaurus*, Sambar *Rusa unicolor*, and Barking Deer *Muntiacus muntjak*. Chinese Pangolin *Manas pentadactyles* is also reported (Choudhury 2005). Occasionally, One-horned Rhinoceros *Rhinoceros unicornis* is seen, possibly coming from Pobitora Wildlife Sanctuary (an IBA).

The reptile diversity is, however, poorly known.

LAND USE

- Forestry
- Cultivation on the fringe areas, including encroachment
- Fishing in the *beel*

THREATS AND CONSERVATION ISSUES

- Illegal felling of trees
- Firewood collection
- Charcoal making
- Encroachment
- Poaching
- Disturbance by railway line
- Rock quarries

Such a good forest cover relatively free from encroachment near a growing city is a rare feature. Before it is too late, adequate protection measures should be taken to protect the sanctuary. Some settlers of Garo tribe carry out charcoal making. Some tea growers have made attempts to encroach some areas.

Illegal felling of trees for timber, firewood, and charcoal making, increasing encroachment, rock quarrying, and occasional poaching are the main issues. The proposal to construct a main road as a subsidiary to National Highway NH 37, through part of Khanapara and South Amchang RFs, should be reassessed. Khamranga Beel, which is just outside the sanctuary, has been degraded very badly, the construction of a road by the *panchayat* being one of the causes.

This area has great tourism potential because of its location near Guwahati city.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- Barua, M. (2003) Proposal for Amchang, South Amchang and Khanapara RFs as Amchang Wildlife Sanctuary, Gotanagar Wildlife Range, Guwahati. (Mimeographed report).
- Choudhury, A.U. (1999) Status and Conservation of the Asian elephant *Elephas maximus* in north-eastern India. *Mammal Review* 29(3): 141–173.
- Choudhury, A.U. (2002a) Distribution and conservation of the Gaur *Bos gaurus* in the Indian Subcontinent. *Mammal Review* 32(3): 199–226.
- Choudhury, A.U. (2002b) Big cats, elephant, rhino and gaur in Guwahati. *The Rhino Foundation for nature in NE India Newsletter* 4: 16–19 (reprinted in *Tiger Link* 9: 32–33).
- Choudhury, A.U. (2005) Amchang, Barail and Dihing-Patkai – Assam's new wildlife sanctuaries. *Oryx* 39(2): 124–125.

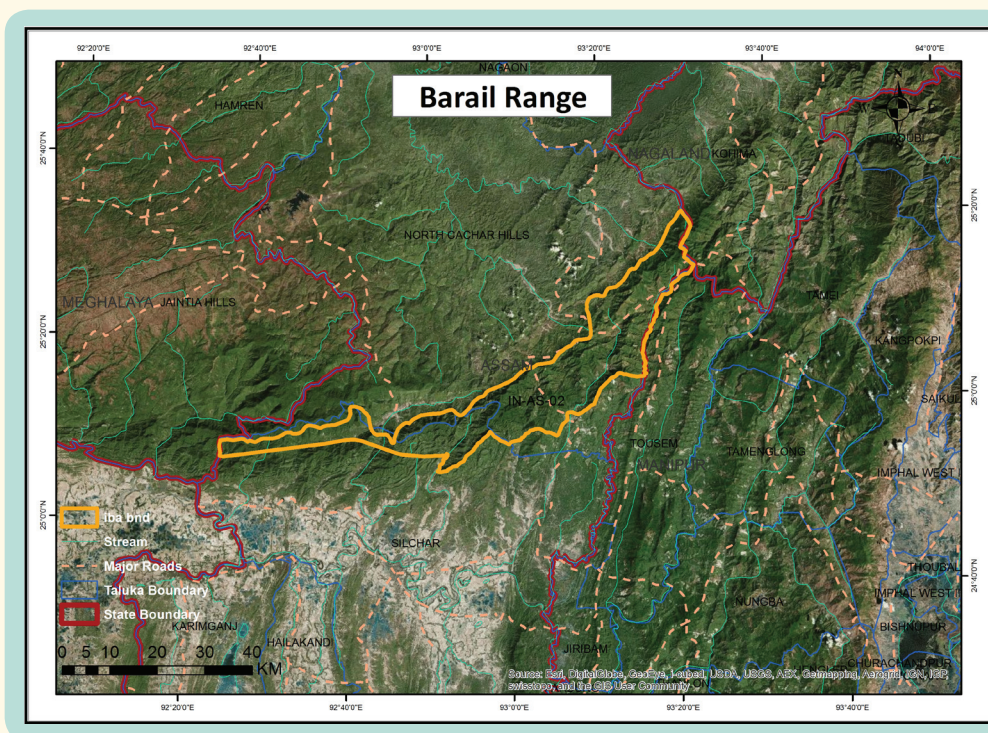
BARAIL RANGE

IN-AS-02

IBA Site Code	: IN-AS-02	Altitude	: 100–1,959 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–6,000 mm
Districts	: North Cachar Hills (Dima Hasao) and Cachar	Temperature	: 2 °C to 35 °C
Coordinates	: 25° 00' to 24° N, 92° 33' to 93° 27" E	Biogeographic Zone	: Northeast
Ownership	: State, community	Habitats	: Tropical Wet Evergreen, Semi-evergreen, and Subtropical Broadleaf
Area	: c. 50,000 ha		Hill Forests

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya), A3 (Biome 8: Sino-Himalayan Subtropical Forest, Biome 9: Indo-Chinese Tropical Moist Forest)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

The Barail Range forms one of the most diverse, but lesser known, ecosystems of Assam. The great altitudinal variation (from less than 100 m to peaks towering above 1,900 m) and the resultant diversity of vegetation, coupled with rich fauna, makes the area an ideal choice for a wildlife reserve and an IBA. Barail is the highest hill range in Assam. The erstwhile Barail IBA was split, and the North Cachar Hill Reserve Forest (RF) and Barail RF of Cachar district were declared as a wildlife sanctuary in 2004 (Choudhury 2005a). The present IBA Barail Range includes Barail RF of North Cachar Hills (Dima Hasao) district and the unclassified forests stretching from the Simleng river valley in the west to Laike in the east (in

North Cachar Hills (Dima Hasao) district and some areas of Cachar district falling east of Barail WLS.

Barail Range is the watershed between the Brahmaputra and Barak rivers. The terrain ranges from flat and undulating in the river valleys, to mountainous with steep slopes. The highest peak is 1,959 m near Laike, while Hamplopet (1,867 m) is the second highest, both of which are outside reserve forests. The climate is tropical monsoon type. The Barail forests are biologically important, with a number of globally Threatened species (Choudhury 1993).

Hill rivers and streams such as the Simleng (Lubha, or Lukha), Diyung, Jatinga, and Modhura are the main water sources, along with an unrecorded number of nullahs that

feed the rivers. The annual rainfall varies from 2,000 mm to more than 6,000 mm.

Vegetation is Tropical Evergreen at low elevations (below 1,000 m), Semi-evergreen in the areas of human disturbance, and Subtropical Broadleaf in the upper reaches (>1,800 m). Champion & Seth (1968) classified it as Cachar Tropical Evergreen Forest, Cachar Tropical Semi-evergreen Forest, and Subtropical Broadleaf Hill Forest. The undisturbed riparian patches are rich in palms and canes. Large patches of wild banana occur in the openings of moist forest and along waterways.

AVIFAUNA

This site was selected as an IBA based on its exceptionally rich birdlife, including many threatened species. The high avian diversity of the Barails was documented long ago (Baker 1922–1930; Hume 1877, 1880). The only known population of Blyth's Tragopan *Tragopan blythii* in Assam is in the extreme east of the Barails near Laike (Choudhury 2000, 2005b). There is a record of the White-winged Duck *Asarcornis scutulata* from Jating IBA which is surrounded on three sites by Barail range IBA. Several records of the Beautiful Nuthatch *Sitta formosa* are also from this IBA. Rufous-necked Hornbill *Aceros nipalensis* has become very rare in recent years.

The site covers two biomes: Biome 8 (Sino-Himalayan Subtropical Forest) at c. 1,000 to 2,000 m and Biome 9

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Blyth's Tragopan	<i>Tragopan blythii</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Beautiful Nuthatch	<i>Sitta formosa</i>

ENDEMIC BIRD AREA 130: EASTERN HIMALAYA\

Blyth's Tragopan	<i>Tragopan blythii</i>
Striped Laughingthrush	<i>Trachalopteron virgatum</i>
Brown-capped Laughingthrush	<i>Ianthocincla austeni</i>
Grey Sibia	<i>Malacias gracilis</i>
Beautiful Sibia	<i>Malacias pulchella</i>
White-naped Yuhina	<i>Yuhina bakeri</i>
Yellow-vented Warbler	<i>Phylloscopus cantator</i>

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Pied Falconet	<i>Microhierax melanoleucos</i>
Mountain Bamboo-partridge	<i>Bambusicola fytchii</i>
Blue-throated Barbet	<i>Megalaima asiatica</i>
Bay Woodpecker	<i>Blythipicus pyrrhotis</i>
Black-winged Cuckooshrike	<i>Coracina melaschistos</i>
Short-billed Minivet	<i>Pericrocotus brevirostris</i>
Slender-billed Oriole	<i>Oriolus tenuirostris</i>
Maroon Oriole	<i>Oriolus traillii</i>
Grey Treepie	<i>Dendrocitta formosae</i>

BIOME 9: INDO-CHINESE TROPICAL MOIST FOREST

Grey Peacock-pheasant	<i>Polyplectron bicalcaratum</i>
Pale-headed Woodpecker	<i>Gecinulus grantia</i>



ANWARUDDIN CHOUDHURY

Barail Range near Laisong. Allan Octavian Hume and Stuart Baker did not their bird collections in this part of North Cachar

(Indo-Chinese Tropical Moist Forest) mainly below c. 1,000 m. BirdLife International (undated) has listed 95 species in Biome 8, of which nine are found here, though many more are likely to be found. Two out of nine species listed in Biome 9 are also present. Both are quite common in the tropical moist forests. As can be expected, some species of other biomes are also found, mainly as winter migrants. For example, Grey-backed Shrike *Lanius tephronotus* (Biome 5: Eurasian High Montane and Tibetan) is seen in winter, while Hill Partridge *Arborophila torqueola* is seen in the higher reaches (c. 2,000 m) of this site.

OTHER KEY FAUNA

Barail Range has rich mammalian fauna. Seven species of primates are found: Slow Loris *Nycticebus bengalensis*, Stump-tailed Macaque *Macaca arctoides*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Pig-tailed Macaque *M. nemestrina leonina*, Capped Langur *Trachypithecus pileatus*, and Western Hoolock Gibbon *Hoolock hoolock*. Other mammals include the Asiatic Black Bear *Ursus thibetanus*, Tiger *Panthera tigris* (very rare), Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Cat *Catopuma temminckii*, Marbled Cat *Pardofelis marmorata*, Wild Dog *Cuon alpinus*, Sambar *Rusa unicolor*, Indian Muntjac *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Binturong *Arctictis binturong* and the Red Serow *Capricornis rubidus*. Small populations of Gaur *gaurus* also occur. Asiatic Elephant *Elephas maximus* is extirpated now. Common reptiles include various species of lizards and snakes throughout the site. The Brown Hill Tortoise *Manouria emys* is also met with occasionally.

LAND USE

- Forest
- Agriculture

THREATS AND CONSERVATION ISSUES

- Agriculture (*Jhum* cultivation)
- Plantation of Teak, Sal, Betel
- Encroachment
- Hunting and poaching

The entire range in North Cachar Hills (Dima Hasao) district does not have a single hectare under a protected area, although it was proposed for a national park (Choudhury 1989) as well as a biosphere reserve (Choudhury 1993), the latter covering about 790 sq. km including parts of Cachar. The Cachar part of the proposal has been notified as a sanctuary.

The hill slopes, especially outside the reserve forests, are being degraded by *jhum* cultivation, tree felling and betel-vine plantation. The vines are planted after clearing the middle layer (shrubs) and understorey in mature forest, by



ANWARUDDIN CHOUDHURY

Barail IBA is also inhabited by numerous tribes. Seen here is the Jemi Naga village at Laisong

Khasi settlers. Sometimes banana is also cultivated in these plantations. The forest understorey is cleared right up to the hilltop in some places (Birand & Pawar 2001).

Other major issues in the area are hunting or poaching of wildlife. The main tribes of the area are Hmar, Kuki, Jemi Naga, Khasi (Jaintia), Karbi, and Dimasa Kachari.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Aysegul Birand, Samrat Pawar.

KEY REFERENCES

- Baker, E.C.S. (1922–30) *The Fauna of British India. Birds*. 8 vols. Taylor and Francis, London.
- Birand, A. and Pawar, S. (2001) A survey of birds in Northeast India. Final Report, Centre for Ecological Research and Conservation, Mysore.
- BirdLife International (undated) *Important Bird Areas (IBAs) of Asia. Project Briefing Book*. Pp. 103. Unpubl.
- Champion, H.G. and Seth, S.K. (1968) *A Revised Survey of Forest Types of India*. Govt. of India Press, Delhi.
- Choudhury, A.U. (1989) Campaign for Wildlife Protection: National park in the Barails. *The WWF-India Quarterly* No. 69.10 (2): 4–5.
- Choudhury, A.U. (1993) Potential Biosphere Reserves in Assam (India). *Tigerpaper* 20(1): 2–8.
- Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books and WWF-India NE Region, Guwahati.
- Choudhury, A.U. (2005a) Amchang, Barail and Dihing-Patkai – Assam's new wildlife sanctuaries. *Oryx* 39(2): 124–125.
- Choudhury, A.U. (2005b) Distribution, status and conservation of galliformes in north-east India. Pp. 38–56. In: Fuller, R.A. and Browne, S.J. (Eds) 2005. *Galliformes 2004. Proceedings of the 3rd International Galliformes Symposium*. World Pheasant Association, Fordingbridge, UK.
- Hume, A.O. (1877) A first list of the birds of northeastern Cachar. *Stray Feathers* 5: 1–47.
- Hume, A.O. (1880) A second list of the birds of northeastern Cachar. *Stray Feathers* 9: 241–259.

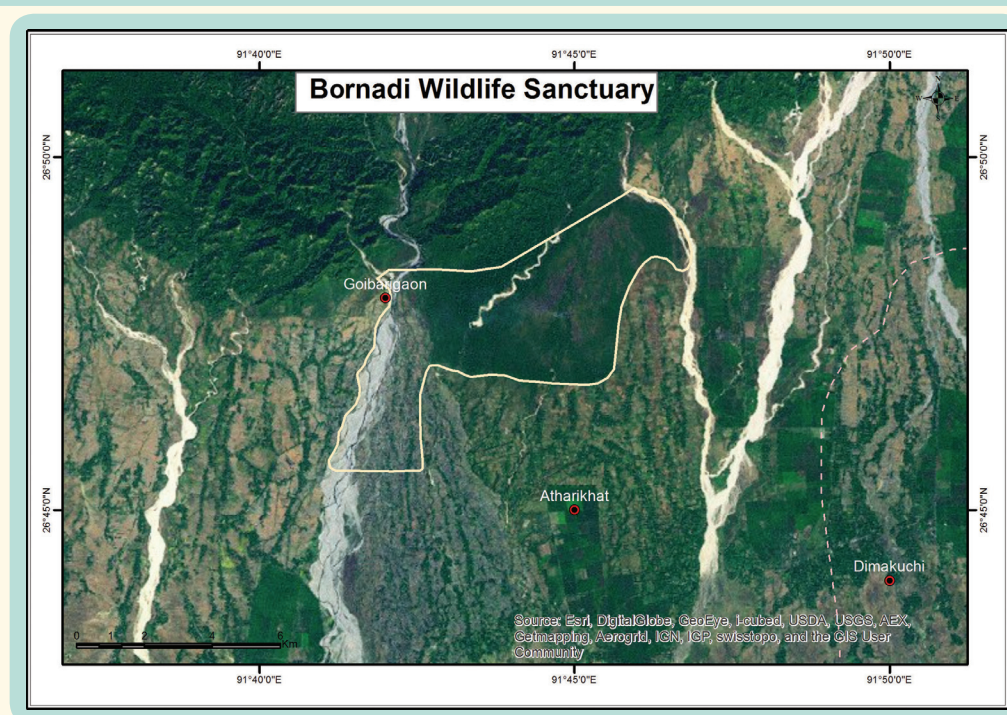
BORNADI WILDLIFE SANCTUARY

IN-AS-03

IBA Site Code	: IN-AS-03	Altitude	: 100–200 msl
Administrative Region	: Assam	Rainfall	: >2,000 mm
(State)		Temperature	: 7 °C to 34 °C
District	: Baksa, Udalguri	Biogeographic Zone	: Northeast
Coordinates	: 26° 47' 36" N, 91° 43' 48" E	Habitats	: Tropical Moist Deciduous Forest,
Ownership	: State		Tropical Semi-evergreen Forest,
Area	: 2,622 ha		Tropical Grassland

IBA CRITERIA: A1 (Threatened species). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established August, 1980.



GENERAL DESCRIPTION

Bornadi Wildlife Sanctuary lies in the northern part of Udalguri district, with its western part in Baksa district, on the international border with Bhutan. The sanctuary is bordered by the Bornadi river and Nalapara river to the west and east respectively, and fringed with cultivation, tea gardens, and settlements to the south. On the northern boundary with Bhutan lies a contiguous reserve forest. To the east, Bornadi is contiguous with Darranga Reserve Forest and close to Khalingdaur Reserve Forest.

The site, which lies at the foothills of the Himalaya, consists largely of flat *bhabar* plains, intersected by numerous nullahs (streams) that remain dry for the greater part of the year.

Bornadi was established specifically to protect the Pygmy Hog *Porcula salvania* and Hispid Hare *Caprolagus hispidus*, both of which were thought to be extinct prior to 1971, when they were rediscovered at this site (Oliver 1980, 1981; Rahmani

et al. 1988). The sanctuary is also important as a refuge for other threatened species such as the Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, and Gaur *Bos gaurus*.

Although about 60% of Bornadi WLS is reported to be grassland, most of it is now grassy woodland. Plantations of *Tectona grandis*, *Careya arborea*, *Artocarpus chaplasha*, *Dillenia* sp., and *Anthocephalus* sp. have destroyed the open grasslands. Only one grassland remains in the sanctuary along River Deosunga, which is c. 200 m at its broadest (Anon. 1990).

The main forest types are Tropical Moist Deciduous Forest along the northern edge of the sanctuary, and mixed scrub and grassland in the southern part, with a few trees. The vegetation in the south, however, has been drastically modified by human activity. Most of the natural vegetation has been cleared and replaced with commercial plantations of *Bombax ceiba*, *Gmelina arborea*, *Phoebe goalparensis*,



ANWARUDDIN CHOUDHURY

Grassland along the Deosunga river, Bornadi IBA, occasionally becomes the haunt of Bengal Florican *Houbaropsis bengalensis* and Swamp Francolin *Francolinus gularis*

CRITICALLY ENDANGERED

Bengal Florican (?)

Houbaropsis bengalensis

Tectona grandis, and *Eucalyptus*, and by thatch grasses (mostly *Saccharum*, with some *Phragmites* and *Themeda*).

AVIFAUNA

The site has been selected as an IBA due to the presence of the Bengal Florican *Houbaropsis bengalensis* which was reported earlier from the grassland. The grassland is still present, albeit not in pristine condition, but there has been no recent record of the florican from this area (G. Narayan, pers. comm. 2003). However, if proper protection is given, the grassland could be revived. Much like other similar forests of Assam, Bornadi WLS is also extremely rich in bird diversity, but no detailed study has been conducted. As far as birdlife is concerned, this site should be considered Data Deficient.

OTHER KEY FAUNA

The mammalian fauna of the sanctuary includes the Capped Langur *Trachypithecus pileatus*, Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Hog Deer *Axis porcinus*, Pigmy Hog *Porcula salvania*, Hispid Hare *Caprolagus hispidus*, and Gaur *Bos gaurus*. Although the sanctuary is small, it is a favourite haunt of wild elephants, often in large numbers.

LAND USE

- Forestry
- Nature conservation

THREATS AND CONSERVATION ISSUES

- Hunting
- Uncontrolled burning of vegetation
- Grazing

The sanctuary suffers from acute water scarcity throughout winter. More than 300 ha in southwest Bornadi WLS was extensively encroached upon, prior to its designation as a sanctuary. Cattle, including domestic buffalo, and some sheep graze in the grasslands.

Insurgency has played havoc with the inherently weak management of this important site, as a result of which poaching and tree cutting are rampant.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Goutam Narayan, Bibhuti Lahkar.

KEY REFERENCES

- Anon. (1990) Status and Ecology of the Lesser and Bengal Floricans, with reports on Jerdon's Courser and Mountain Quail. Final Report. Bombay Natural History Society, Bombay. Pp. 155.
- Oliver, W.L.R. (1980) The Pigmy Hog – The Biology and Conservation of the Pigmy Hog *Sus salvanius* and Hispid Hare *Caprolagus hispidus*. Jersey Wildlife Preservation Trust Special Scientific Report No. 1. Pp. 80.
- Oliver, W.L.R. (1981) Pigmy Hog and Hispid Hare – further observations of the continuing decline. *Dodo* 18: 10–20.
- Rahmani, A.R., Narayan, G., Sankaran, R., and Rosalind, L. (1988) Bengal Florican – Status and Ecology. Annual Report 1986–1987. Bombay Natural History Society, Bombay.

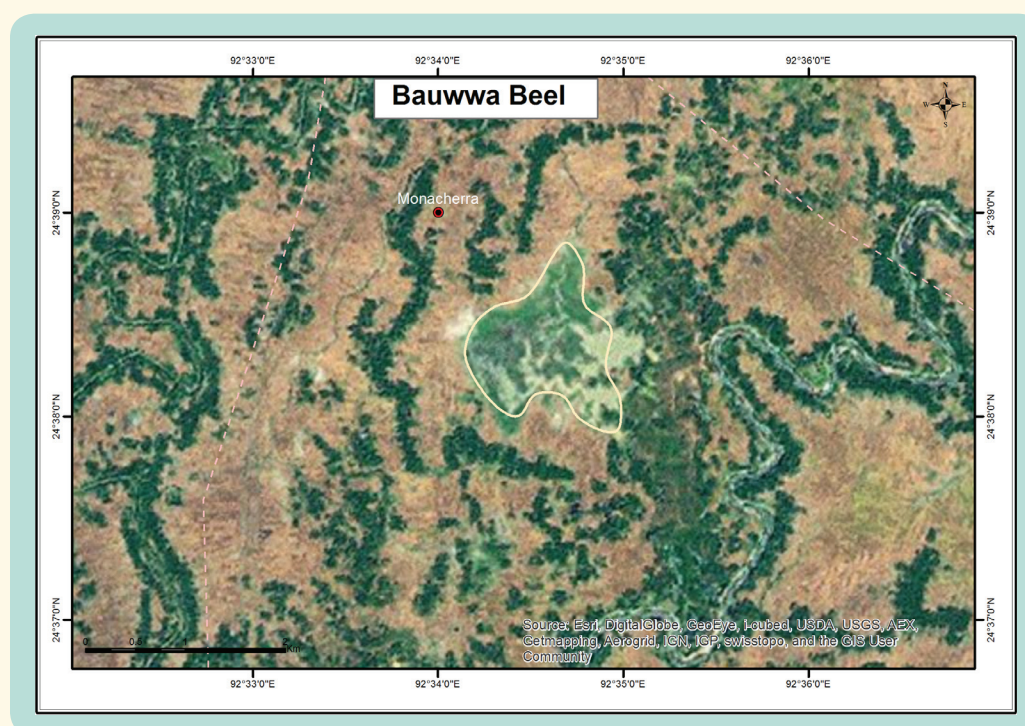
BAUWWA BEEL

IN-AS-04

IBA Site Code	: IN-AS-04	Area	: c. 70 ha
Administrative Region (State)	: Assam	Altitude	: 60 msl
District	: Hailakandi	Rainfall	: >3,000 mm
Coordinates	: 24° 37' 60" N, 92° 34' 60" E	Temperature	: 7 °C to 35 °C
Ownership	: State, Private	Biogeographic Zone	: Northeast
		Habitats	: Freshwater Swamp

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected. IBA in Danger.



GENERAL DESCRIPTION

This wetland in Hailakandi district in southern Assam is located near Hailakandi town and is surrounded by villages. In winter, large parts of the site become dry, with marshy areas on the fringes. Although reclamation and siltation have reduced the waterspread, it is more than 150 ha in monsoon and around 70 ha in the post-monsoon season (Choudhury 2000). Bauwwa Beel is relatively small, but remains the most significant in the Barak Valley region, as many other *beels* have been lost to land reclamation. During the last 10 years, most of the wetland is encroached and the trigger species due to which it was considered an IBA are no longer found here in significant numbers. Therefore, we have marked this IBA as IBA in Danger.

AVIFAUNA

More than 90 species of birds were identified earlier, but now the number is much reduced. Lesser Adjutant *Leptoptilos*

javanicus was seen regularly, but now it is sighted only occasionally. Spot-billed Pelican *Pelecanus philippensis*, very rare in the entire Barak Valley, has stopped coming to this wetland. One was killed by hunters in 2002–2003, indicating its occasional appearance in the site. Swamp Francolin *Francolinus gularis* has become locally extinct. A few White-rumped Vultures *Gyps bengalensis* have been recorded in recent years (Choudhury 2013).

The only recent records of the Eurasian Golden Plover *Pluvialis apricaria* and Eastern or Great Knot *Calidris tenuirostris* in Assam were from this IBA (Choudhury 2000).

OTHER KEY FAUNA

Golden Jackal *Canis aureus*, Small Indian Mongoose *Harpactes javanicus*, and various turtles have been reported.



Bauwua beel is a major wetland of southern Assam

CRITICALLY ENDANGERED

White-rumped Vulture *Gyps bengalensis*

VULNERABLE

Lesser Adjutant *Leptoptilos javanicus*

Greater Spotted Eagle *Clanga clanga*

NEAR THREATENED

Spot-billed Pelican *Pelecanus philippensis*

LAND USE

- Fishing
- Agriculture

THREATS AND CONSERVATION ISSUES

- Land reclamation and paddy cultivation
- Siltation

- Over-fishing
- Poaching of birds

Reclamation for cultivation, and siltation have already reduced the size of the wetland to a great extent. Over-fishing is another major conservation issue. Poaching of waterbirds is a regular problem.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Aamir Sohail Choudhury.

REFERENCES

- Choudhury, A.U. (2013): Conservation concern of Bauwua beel IBA in Assam. *NL & Journal of The Rhino Foundation for Nature in NE India* 9: 17.
- Choudhury, A.U. (2000): *The Birds of Assam*. Gibbon Books and WWF-India, NE Regional Office, Guwahati. Pp. 240.

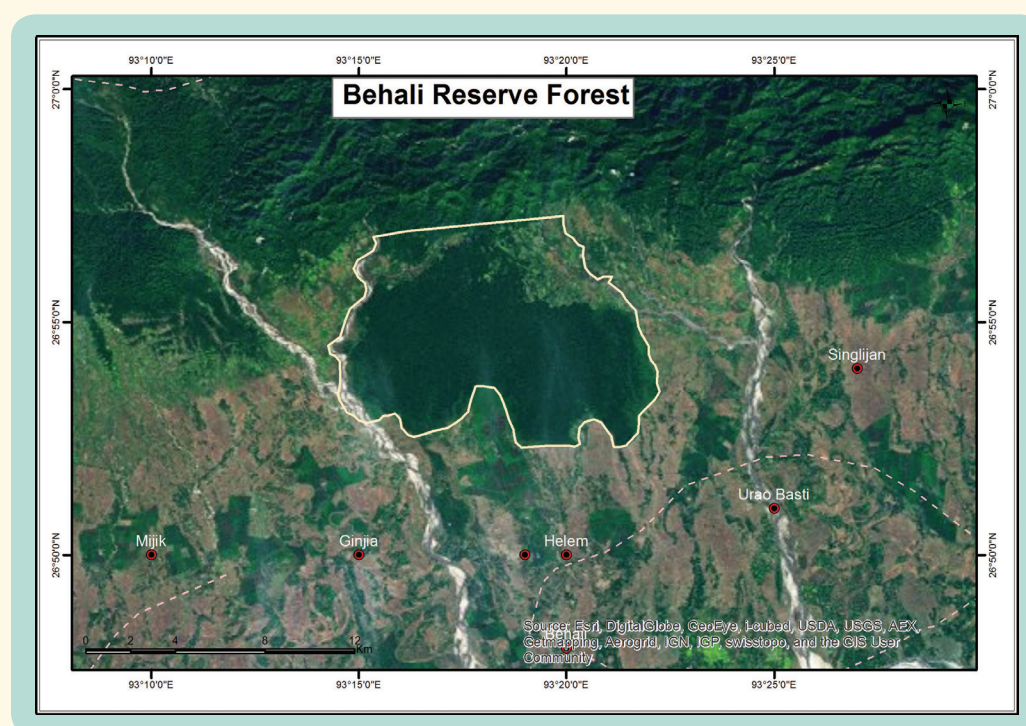
BEHALI RESERVE FOREST

IN-AS-05

IBA Site Code	: IN-AS-05	Altitude	: 80–150 msl
Administrative Region (State)	: Assam	Rainfall	: >2,300 mm
District	: Sonitpur	Temperature	: 6 °C to 34 °C
Coordinates	: 26° 55' 00" N, 93° 22' 60" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Wet Evergreen Forest, Semi-evergreen Forest
Area	: 14,000 ha		

IBA CRITERIA: A1 (Threatened species), A3 (Biome 9: Indo-Chinese Tropical Moist Forest). Data Deficient.

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

Behali Reserve Forest is located in the foothills of the Eastern Himalaya, in Sonitpur district of Assam, on the Assam-Arunachal Pradesh border. It is part of the Sonitpur Elephant Reserve that was notified in 2003. The area is flat with gentle slopes. Some hilly areas lie in the extreme north of the IBA.

The forest is Tropical Wet Evergreen and Semi-evergreen. Some fine patches of primary rainforest are still to be seen in the area. The top canopy consists of species such as *Tetrameles nudiflora*, an emergent deciduous species, which is widely used by hornbills for nesting (A.U. Choudhury, pers. comm. 2003).

AVIFAUNA

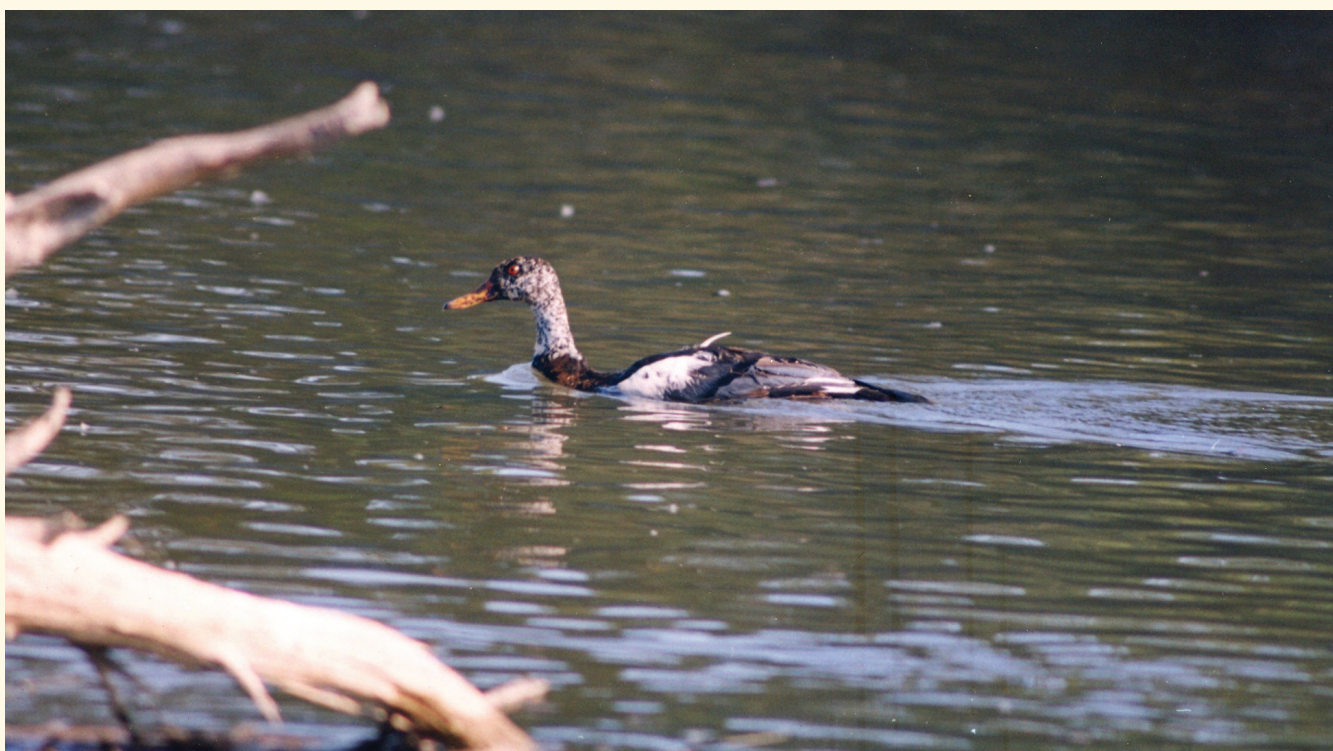
Rich and diverse birdlife exists in the area, but a complete checklist is yet to be prepared. This IBA is known for its

population of White-winged Duck *Asarcornis scutulata* (Choudhury 2000). There are four species of hornbills, the Oriental Pied *Anthraceroceros albirostris*, Wreathed *Aceros undulatus*, Great Pied *Buceros bicornis*, and the globally Threatened Rufous-necked *Aceros nipalensis*. The last named species is only occasional in winter. The Lesser Adjutant *Leptoptilos javanicus* is seen regularly in small numbers at the edges of the IBA and in the encroached areas. In winter, the abundance of birds increases to a great extent with the arrival of altitudinal migrants (A.U. Choudhury, pers. comm. 2003).

As no detailed study on birds has been conducted, this site could be considered Data Deficient.

OTHER KEY FAUNA

Behali is an important area for the Asiatic Elephant *Elephas maximus*, Slow Loris *Nycticebus bengalensis*, Capped



RANJAN KUMAR DAS

This IBA was known for its population of White-winged Duck *Asarcornis scutulata* but we need proper surveys to know its current status

Langur *Trachypithecus pileatus*, Tiger *Panthera tigris*, and Leopard Cat *Prionailurus bengalensis*, among others.

LAND USE

- Forestry
- Agriculture

THREATS AND CONSERVATION ISSUES

- Encroachment
- Illegal felling of trees
- Poaching
- Insurgency
- Interstate border dispute

Behali RF is among the survivors in Sonitpur where organized encroachment has destroyed most of the forest outside protected areas. A relatively small area of this IBA has been encroached, but it is under constant pressure (Choudhury 2002). A local NGO named Save is active in the area and has taken conservation initiatives here. Illegal tree felling and occasional poaching are other issues. The interstate border dispute between Assam and Arunachal

CRITICALLY ENDANGERED

Red-headed Vulture *Aegypius calvus*

ENDANGERED

White-winged Duck *Asarcornis scutulata*

VULNERABLE

Lesser Adjutant *Leptoptilos javanicus*
Rufous-necked Hornbill *Aceros nipalensis*

NEAR THREATENED

Great Pied Hornbill *Buceros bicornis*

Pradesh often makes the area vulnerable to encroachment and felling of trees.

This vital IBA is in grave danger and must be saved at any cost.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Ajay Sharma.

KEY REFERENCES

- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
Choudhury, A.U. (2002) Massive habitat loss for primates in Assam's Sonitpur district. *Asian Primates* 8(1&2): 18–20.

BHERJAN-BORAJAN-PODUMONI WILDLIFE SANCTUARY

IN-AS-06

IBA Site Code : IN-AS-06

 Administrative Region : Assam
(State)

District : Tinsukia

Coordinates : 27° 28' 30" N, 95° 22' 30" E

Ownership : State

Area : 774 ha

Altitude : 119–122 msl

Rainfall : 2,300–3,800 mm

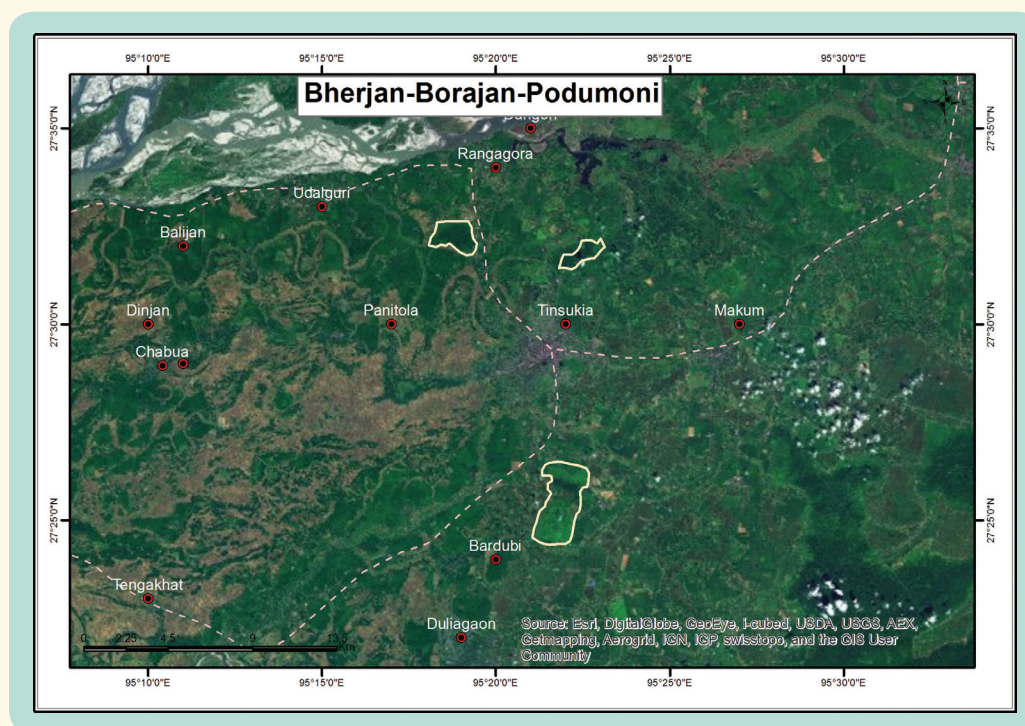
Temperature : 7 °C to 32 °C

Biogeographic Zone : Northeast

Habitats : Tropical Wet Evergreen Forest

IBA CRITERIA: A1 (Threatened species) A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS: Wildlife Sanctuary, established in October, 1999.



GENERAL DESCRIPTION

Bherjan (105 ha), Borajan (493 ha), and Podumoni (176 ha) are tiny pockets of lowland tropical forest present in Tinsukia district, Assam. These forested areas have the distinction of bearing the highest biomass of primates anywhere in the Indian subcontinent (Choudhury 1995a, 1995b). The three areas are disjunct and separated by tea gardens and human habitations. They are entirely on the flat plains of the Brahmaputra Valley, so they lie in the Endemic Bird Area Assam Plains (EBA 131) (BirdLife International undated).

Older alluvium of the River Brahmaputra covers all three areas. The compact, brownish soil is suitable for tea plantation, hence all the forests have tea gardens on the fringe areas. There are small, scattered marshes, with swamps, covered with dense growth of grass and *Alpinia* herb.

The natural vegetation of all these areas is Tropical Wet Evergreen ‘rainforest’ type, but now it is badly degraded due to extensive deforestation and plantation (Ranjan Kumar Das, *pers. comm.* 2014). The original vegetation has been replaced by a fairly old mixed plantation dominated by the deciduous species *Lagerstroemia parviflora* and *Terminalia myriocarpa*. The Podumoni part is mostly in a degraded state due to large-scale felling. The canopy has been very badly fragmented. Only a few mature trees of *Artocarpus*, *Bombax*, *Lagerstroemia*, and *Mesua* species can be seen. Borajan is a pocket of excellent rainforest, dominated by *Dipterocarpus macrocarpus*. Except for Teak, all the species of the other two forest pockets are found here. Bamboo species are found in all areas. *Stenochleana palustre*, an edible fern, grows abundantly all over, especially in the openings and clearings.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Rusty-bellied Shortwing	<i>Brachypteryx hypertythra</i>
-------------------------	---------------------------------

AVIFAUNA

Eighty-four species of birds have been identified (Choudhury 1995a), including some Threatened and Near Threatened species. Currently, the number has gone above a hundred species. This site has been identified as an IBA based on the presence of three threatened species, notably the Vulnerable Lesser Adjutant *Leptoptilos javanicus* and two species of Critically Endangered *Gyps* vultures. At least three pairs of Lesser Adjutant nest in Borajan RF. Locally it is called *Godul* (Choudhury 1995a). Many lowland birds of the Tropical Wet Evergreen Forests of Assam, of which only fragments are left, are found here.

The Oriental Pied Hornbill *Anthraceroceros albirostris* and Near Threatened Great Pied Hornbill *Buceros bicornis* are occasional visitors to Bherjan and Podumoni. Rusty-bellied Shortwing *Brachypteryx hypertythra*, a Near Threatened species, is a regular winter visitor to these three reserve forests (Ranjan Kumar Das, *pers. comm.* 2014)

The site lies in Biome 9 (Indo-Chinese Tropical Moist Forest) as classified by BirdLife International (undated).

OTHER KEY FAUNA

Other fauna of the sanctuary include the Short-tailed Mole *Euroscaptor micrura*, Slow Loris *Nycticebus bengalensis*, Pig-tailed Macaque *Macaca nemestrina leonina*, Rhesus Macaque *M. mulatta*, Assamese Macaque *M. assamensis*, Stump-tailed Macaque *M. arctoides* (locally extinct), Capped Langur *Trachypithecus pileatus*, Hoolock Gibbon *Hoolock hoolock*, Chinese Pangolin *Manis pentadactyla*, Golden Jackal *Canis aureus*, Leopard Cat *Prionailurus bengalensis*, Leopard *Panthera pardus*, Tiger *P. tigris* (stray), Asiatic Elephant *Elephas maximus* (stray), Common Giant Flying Squirrel *Petaurista petaurista*, Pallas's Squirrel *Callosciurus erythraeus*, Malayan Giant Squirrel *Ratufa bicolor*, Chinese Porcupine *Hystrix hodgsoni*, Wild Boar *Sus scrofa*, and Barking Deer

Muntiacus muntjak.

AND USE

- Nature conservation

THREATS AND CONSERVATION ISSUES

- Illegal felling
- Firewood collection
- Encroachment
- Poaching
- Pollution of waterbodies by insecticides used in the tea gardens

The presence of a forest village in Borajan causes much biotic pressure. This village (Palga Forest village) could be relocated. No more encroachment by the 'Forest villagers' should be allowed. Roads passing through the middle of Bherjan and Borajan RFs should be aligned along the boundaries. The powerline passing through Borajan RF also needs to be realigned outside the forest area.

Since all the forests are small, they should be fenced off. An awareness campaign is also necessary in the fringe villages and tea gardens. Due to wanton felling in the village woodlands to the north and east of Bherjan, the Hoolock Gibbons in those areas are under threat. The possibility of rescue and translocation of 'village' Hoolock Gibbons to Bherjan Reserve Forest may be explored. In the degraded portions of the sanctuary, the regeneration is excellent and only a small plantation may be required. The adjacent tea estates could raise plantations of selected species of trees and bamboo on their fringe areas. This will greatly supplement the range and food of the primates and birds, without any loss to the estates. Among birds, poachers mainly target Kaleej Pheasant *Lophura leucomelanos* and Red Junglefowl *Gallus gallus*. The latter is locally exterminated in Podumoni and Bherjan forests, while it is extremely rare in Borajan.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Ranjan Kumar Das.

KEY REFERENCES

- BirdLife International (undated) *Important Bird Areas (IBAs) of Asia: Project Briefing Book*. Pp. 103. Unpubl.
- Choudhury, A.U. (1995a) Wildlife Survey in Bherjan, Borajan and Podumoni Reserved Forests of Tinsukia District, Assam, with a proposal for a Wildlife Sanctuary. The Rhino Foundation for Nature in NE India, Guwahati, India.
- Choudhury, A.U. (1995b) Primates in Bherjan, Borajan and Podumoni Reserved Forests of Assam, India. *Asian Primates* 5(3&4): 10–11.

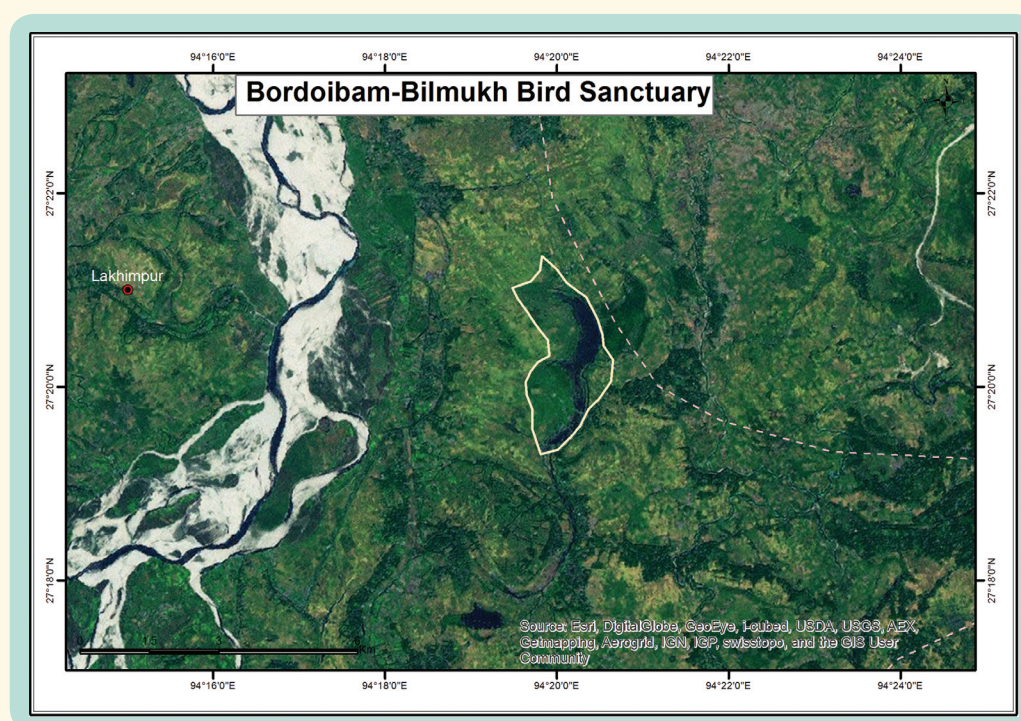
BORDOIDAM-BILMUKH BIRD SANCTUARY

IN-AS-07

IBA Site Code	: IN-AS-07	Altitude	: 90–95 msl
Administrative Region (State)	: Assam	Rainfall	: >2,000 mm
District	: Dhemaji, Lakhimpur	Temperature	: 7 °C to 35 °C
Area	: 1,124 ha	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Permanent Freshwater Lake, Grassland
Coordinates	: 27° 19' 60" N, 94° 19' 60" E		

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Wildlife Sanctuary, established in July 1996.



GENERAL DESCRIPTION

Bordoibam-Bilmukh was a large freshwater lake that was created during the great earthquake of 1950. It was part of the River Subansiri, which now flows 7 km away from the lake. The sanctuary is 50 km from Lakhimpur, the district headquarters, and 455 km from Guwahati. A large number of migratory waterfowl used to be seen in winter while some globally Threatened species such as the Spot-billed Pelican *Pelecanus philippensis* (Near Threatened) and Lesser Adjutant *Leptoptilos javanicus* (Vulnerable) are seen all through the year. Since the late 1990s, due to high floods and degradation of surrounding areas, a large part of the *beel* started to silt up and now only a small part retains water. The bulk of the *beel* has been converted into silted up land with a water channel. The wetland was fringed by tall emergent vegetation, mainly *Arundo donax*, where the Swamp Francolin *Francolinus gularis* was not uncommon

some years ago. However, the grassland has been destroyed by villagers, so this bird is now rarely seen.

The typical aquatic, floating, and emergent vegetation of wetlands is seen in this wetland also. In the drying and dried up part, *Arundo donax* dominates along with sedges. A few *Barringtonia acutangula* trees are found on the fringes.

Islam & Rahmani (2008) proposed this lake as a potential Ramsar Site as it easily qualifies for Ramsar Criteria 2 (wetland supports threatened species and threatened ecological communities), and is Ramsar Wetland Type O (permanent freshwater lake). As it is also important for local human communities, it can become a model wetland for wise use with the involvement of local communities, particularly fishermen.

AVIFAUNA

More than 165 bird species have been recorded (Phukan *et*

al. 1997). Besides the Lesser Adjutant *Leptoptilos javanicus*, there are some records of Greater Adjutant *Leptoptilos dubius*. Pallas's Fish-eagle *Haliaeetus leucoryphus* is another globally Threatened species seen here. It is of great conservation concern, as this large raptor requires undisturbed wetlands.

The Bordoibam wetland is known as a breeding ground of the Large Whistling Duck *Dendrocygna bicolor*, Purple Swamphen *Porphyrio porphyrio*, Bronze-winged Jacana *Metopidius indicus*, White-breasted Waterhen *Amaurornis phoenicurus*, and Watercock *Gallicrex cinerea* (Talukdar 1993).

Although this IBA does not support more than 20,000 birds (A4iii criteria), it has great potential as a major waterfowl sanctuary of Assam. It has been selected on the basis of the Threatened species found here.

The first record of the Little Crane *Porzana parva* in Assam and north-east India was from this site, being recorded in 1991 (Choudhury 2007).

OTHER KEY FAUNA

Other important fauna of the site include Fishing Cat *Prionailurus viverrinus*, and Hog Deer *Axis porcinus*. Both the species are almost extirpated. Some Smooth Indian Otter *Lutrogale perspicillata* may still survive. Not much work has been done on amphibians and reptiles, although *Hoplobatrachus tigerinus*, *Bufo melanostictus*, and *Rhacophorus* spp. have also been recorded.

LAND USE

- Agriculture
- Fishing
- Nature conservation

THREATS AND CONSERVATION ISSUES

- Heavy siltation
- Agriculture
- Fishing
- Poaching of birds
- Livestock grazing
- Aquatic weeds

The site was proposed as a bird sanctuary in 1990 (Choudhury 1990). The Forest Department of Assam prepared a draft notification to make this wetland a bird sanctuary

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
----------------------	-------------------------

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Painted Stork	<i>Mycteria leucocephala</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaeus</i>

and preliminary notification was issued in 1996. Presently, the wetland is controlled by the Revenue Department and fishing lease is granted annually (Choudhury 1990, Talukdar 1993). The disturbance caused by fishermen is tremendous and scares away migratory birds.

There are three villages on the fringe. Some villagers oppose the creation of the sanctuary, although the majority of them are supportive or neutral. Fishing, collection of grass and reeds, and poaching are the major problems.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Bikul Goswami, Megamix Nature Club.

KEY REFERENCES

- Choudhury, A.U. (1990) Proposal for declaring Bordoibam-Bilmukh as a bird sanctuary. Unpublished report to Forest Department, Assam.
- Choudhury, A.U. (2007). The first record of the Little Crane *Porzana parva* from Assam. *Indian Birds* 3(3): 106.
- Islam, M.Z. and Rahmani, A.R. (2008) *Potential and Existing Ramsar Sites in India*. Indian Bird Conservation Network: Bombay Natural History Society, BirdLife International and Royal Society for the Protection of Birds. Oxford University Press. Pp. 592.
- Phukan, D., Dutta, N.N., Gogoi, N.N., and Das, A. (1997) Bordoibam-Bilmukh Bird Sanctuary. Megamix Nature Club, Dhakuakhana, Pp. 24.
- Talukdar, B.K. (1993) Need to preserve Bordoibam wetland. *Newsletter for Birdwatchers* 33(5): 90.

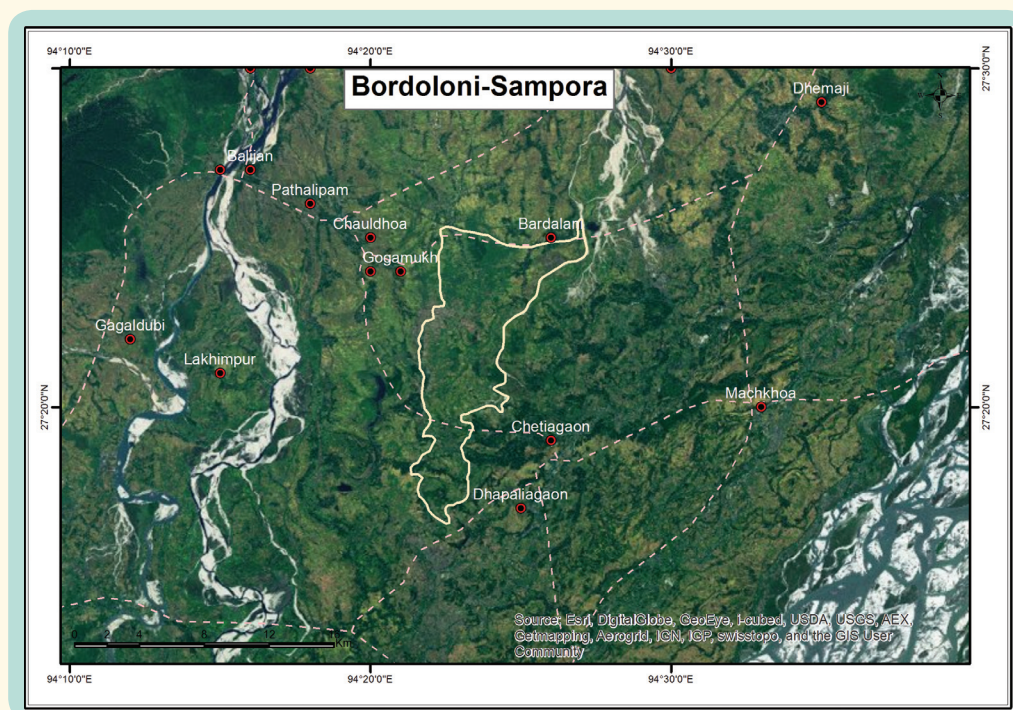
BORDOLONI-SAMPORA

IN-AS-08

IBA Site Code	: IN-AS-08	Area	: 3,000 ha
Administrative Region (State)	: Assam	Altitude	: 90 msl
Districts	: Lakhimpur, Dhemaji	Rainfall	: 2,500–3,500 mm
Coordinates	: 27° 25' 00" N, 94° 22' 60" E	Temperature	: 7 °C to 35 °C
Ownership	: State, Private	Biogeographic Zone	: Northeast
		Habitats	: Tropical Grassland

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains), A4i (1% of biogeographic population)

PROTECTION STATUS: Not officially protected. IBA in Danger.



GENERAL DESCRIPTION

This IBA site includes a large marshy tract with *beels* and grassland in eastern Assam. It lies partly in Dhakuakhana sub-division of Lakhimpur district (Sampora area), and in Dhemaji district (Bordoloni area). Situated 50 km east of Lakhimpur town, this site is important for waterbirds. The terrain is flat, being on the floodplains. During monsoon, a major part of the IBA is completely inundated. However, during the last decade, most of the marsh has been silted up and in winter virtually no wet area remains. The tall grass has been cut to a great extent and new areas have been brought under the plough (A.U. Choudhury, *unpubl.* 2014). In the near future, this area may have to be delisted from the IBA network. It is IBA in Danger.

AVIFAUNA

Although a full checklist is not available, this wetland complex was covered during various waterfowl counts

and information on many threatened species is available. Particularly noteworthy are records of the Critically Endangered White-bellied Heron *Ardea insignis* and large populations of the Vulnerable Swamp Francolin *Francolinus gularis* (Choudhury 2000). Vultures (common till the 1990s), Endangered Greater Adjutant *Leptoptilos dubius*, and Near Threatened Spot-billed Pelican *Pelecanus philippensis* are other important species recorded. This IBA was proposed as a bird sanctuary in the late 1980s (Choudhury 1991). It is highly likely to harbour the Black-breasted Parrotbill *Paradoxornis flavirostris*, also Vulnerable, as there are past records from the adjoining areas (BirdLife International 2001). A few thousand waterfowl, including ducks and geese, winter in this area, while a few thousand Amur Falcon *Falco amurensis* migrate through it during fall. The site also fulfils A4i criteria (1% of biogeographic population) due to the congregation of Amur Falcon. However, during recent years, the number has gone down, possibly due to change



ASAD R. RAHMANI

Amur Falcon migrates through this IBA. Considering the global interest in Amur Falcon conservation, thorough survey of this IBA should be conducted during the migration of Amur Falcon

in their migratory route. Fortunately, they are not killed in this area (A.U. Choudhury, *pers. comm.* 2014). There is a nesting record of the Near Threatened Lesser Fish-eagle *Ichthyophaga humilis* (Choudhury 2000).

A very thorough bird and biodiversity survey is required at this site as some of the species seen earlier (e.g., White-bellied Heron, Black-breasted Parrotbill) may not exist here anymore. Similarly, survey of vultures is also needed as most species of *Gyps* have massively declined in the last 20 years. We do not know how many are surviving in and around this IBA.

OTHER KEY FAUNA

The Hog Deer *Axis porcinus*, Fishing Cat *Prionailurus viverrinus*, and Rhesus Macaque *Macaca mulatta* are noteworthy (A.U. Choudhury, *pers. comm.* 2003).

LAND USE

- Forestry
- Agriculture
- Fishing

THREATS AND CONSERVATION ISSUES

- Encroachment for agriculture
- Siltation
- Reed gathering
- Poaching of birds
- Disturbance to birds
- Pesticides

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
White-bellied Heron (old record)	<i>Ardea insignis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Lesser Fish-eagle	<i>Ichthyophaga humilis</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>
-------------------------------	----------------------------------

Reclamation of the marsh for cultivation, siltation, and poaching of birds are the main issues.

KEY CONTRIBUTOR

Anwaruddin Choudhury

REFERENCES

BirdLife International (2001) *Threatened Birds of Asia*. BirdLife International, Cambridge, UK.

Choudhury, A.U. (1991) New Dhakuakhana Sub-Division. Annual Report. Revenue, Relief and Rehabilitation, and Registration Departments, Govt. of Assam, 1990–91: 111–117.

Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and WWF-India, NE Regional Office, Guwahati.

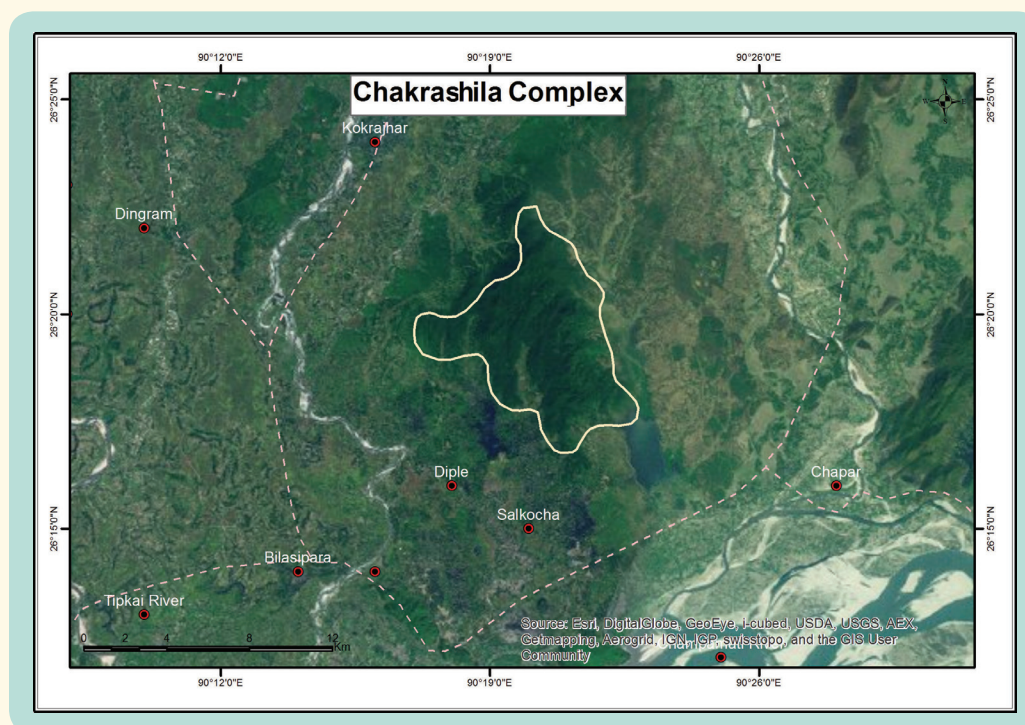
CHAKRASHILA COMPLEX

IN-AS-09

IBA Site Code	: IN-AS-09	Altitude	: 30–455 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–3,000 mm
Districts	: Dhubri, Kokrajhar	Temperature	: 7 °C to 34 °C
Coordinates	: 26° 18' 30" N, 90° 22' 00" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland, Tropical Semi-evergreen Forest
Area	: c. 5,300 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains), A4i (≥1% of biogeographic population), A4iii (≥20,000 waterbirds)

PROTECTION STATUS: Wildlife Sanctuary (4,556 ha), established July, 1994.



GENERAL DESCRIPTION

The Chakrashila Complex includes Chakrashila Wildlife Sanctuary (4,556 ha) and three adjacent wetlands: Dhir, Diplai, and Dakra. The sanctuary is 68 km from Dhubri, the district headquarters, and 219 km from Guwahati city. The nearest railway station is Kokrajhar, which is on the broad gauge line from Howrah to Guwahati. The sanctuary can be approached from Salkocha, a small town on National Highway 37, from where Chakrashila is c. 10 km.

This IBA is an ideal spot for birdwatchers. Its biodiversity provides many niches for several species of residential birds and attracts hundreds of migratory birds. The sanctuary is hilly, with three lakes (Dhir, Diplai, and Dakra) on its southern periphery. There are three major

perennial springs inside the sanctuary: Haohaowi Jhora, Mauriya Jhora, and Bamuni Jhora. The Asian Wetland Bureau and the International Waterfowl and Wetlands Research Bureau have identified the first two lakes as internationally important sites for protection of a number of species.

Dhir Beel is situated 30 km from Kokrajhar town at the base of Chakrashila Wildlife Sanctuary. During the rainy season, these wetlands get connected with the Brahmaputra river. All these wetlands are rich in aquatic flora and fauna and are breeding grounds for fish. Together, these wetlands constitute more than 800 ha.

The site has mainly Moist Deciduous Forest with *Sal Shorea robusta* as the dominant species. There are

grasslands, shrubs, and bamboo thickets also. This forest is richly endowed with orchids and other creepers.

AVIFAUNA

A total of 213 bird species are known to occur in the sanctuary and surrounding waterbodies (Barua 1995, Datta *et al.* 1998, Lahkar 2003). However, the checklist prepared by Datta *et al.* (1998) is not very reliable as it has species such as Mountain Bamboo-partridge *Bambusicola fytchii* and White-bellied Drongo *Dicrurus caerulescens*. Mountain Bamboo-partridge is not found on the north bank of the Brahmaputra, and White-bellied Drongo has not been reported in Assam (Choudhury 2000).

Chakrashila was a hunting ground for local landlords (*zamidars*) and others even after it was declared as a reserve forest in 1966. Poaching of birds, mainly waterfowl, was also prevalent in the area before it was declared as a wildlife sanctuary. This indiscriminate hunting led to the local extinction of a few species such as the Swamp Francolin *Francolinus gularis* (Lahkar 2003). The Swamp Francolin was common in the area, mainly near Chakrashila village and Dhir Beel till the late 1980s, but due to destruction of habitat by agriculture, settlements, firewood and thatch collection, felling and over-hunting, it has been wiped out gradually from the area (Lahkar 2003).

However, some globally Threatened species are still seen, namely Greater Adjutant *Leptoptilos dubius* (EN), Lesser Adjutant *L. javanicus* (VU), and two *Gyps* species of vultures (CR).

Among the Near Threatened species, we have Oriental Darter *Anhinga melanogaster*, Ferruginous Duck *Aythya nyroca*, Grey-headed Fish-eagle *Ichthyophaga ichthyaeus*, Red-headed Vulture *Aegypius calvus*, Great Pied Hornbill

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Baer's Pochard	<i>Aythya baeri</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaeus</i>
Pallid Harrier	<i>Circus macrourus</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

Buceros bicornis, and Pallid Harrier *Circus macrourus* (Lahkar 2003).

Both wetlands, Dhir and Diplai, attract a lot of migratory birds in winter, including the Near Threatened Ferruginous Duck *Aythya nyroca* and the Critically Endangered Baer's Pochard *Aythya baeri*. On January 11, 1991 during the mid-winter Annual Waterfowl Census, 565 Ferruginous Duck were counted in Diplai Beel, c. 500 in Dhir Beel on January 9, 1991, and 328 on January 8, 1992 (Choudhury 2000).

The Greater Spotted Eagle *Clanga clanga* was recorded in Dakra Beel in 1995 (Choudhury 2000).

According to Lopez & Mundkur (1997), 19,828 birds of 43 species were counted in 1994 in Dhir Beel during the Annual Waterfowl Count. In 1995, the population increased to 26,433, but the number of species remained the same. The population declined in 1996 to only 7,102, but the number of



Chakrashila Complex used to have more than 20,000 waterfowl. However, in recent years some of the wetlands have deteriorated due to illegal fishing and encroachment. They need restoration immediately

species was 41. In Diplai Beel, in 1994, the total number of waterfowl was 3,224 of 37 species. For Dakra Beel, we have census information of 1996. A total of 2,409 birds of 20 species were counted.

Lahkar (2003) observed three immatures along with two adults of Jerdon's Baza *Aviceda jerdoni* in the sanctuary. This suggests possible breeding of this species inside the sanctuary.

The site falls in the Assam Plains Endemic Bird Area (EBA 131) (Stattersfield *et al.* 1998) but the terrain of the sanctuary is hilly, while the surrounding areas are plain, having a mixture of beels and wet grasslands. Three globally Threatened species have been listed in this EBA: Manipur Bush-quail *Perdica manipurensis*, Marsh Babbler *Pellorneum palustre*, and Black-breasted Parrotbill *Paradoxornis flavirostris*. Only Marsh Babbler is likely to occur here as some good patches of grassland are still found.

OTHER KEY FAUNA

At least 34 species of mammals have been recorded so far in Chakrashila Wildlife Sanctuary, out of which six species are globally Threatened. Some important mammals include the Golden Langur *Trachypithecus geei*, Rhesus Macaque *Macaca mulatta*, Chinese Pangolin *Manis pentadactyla*, Crab-eating Mongoose *Herpestes urva*, Tiger *Panthera tigris*, Leopard *P. pardus*, Leopard Cat *Felis bengalensis*, Barking Deer *Muntiacus muntjak*, Gaur *Bos gaurus*, Hoary-bellied Himalayan Squirrel *Callosciurus pygerythrus*, Particoloured Flying Squirrel *Hylopetes alboniger*, and Golden Jackal *Canis aureus*. A variety of reptiles and amphibians are also found in this site, such as Common Krait *Bungarus spp.*, Cobra *Naja naja*, Rock Python *Python molurus*, and Monitor Lizard *Varanus bengalensis*.

LAND USE

- Research
- Afforestation
- Fishing
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

- Illegal felling
- Poaching
- Fishing

For the past many years, conservationists have been demanding the inclusion of Dhir and Diplai Beels in the Chakrashila Wildlife Sanctuary but the request is pending with the Government.

The major conservation issue is fishing with very fine mesh nets which catch non-target species and fish fingerlings. Poaching of birds also takes place, but it could be easily controlled by better management and awareness. The wetlands are under the control of the Fisheries Department, that further complicates the problem, as their aim is to maximize fish catch and not conservation.

All these problems show the need to work with local communities to benefit them and also conserve the site.

KEY CONTRIBUTORS

Nature's Beckon, Bablu Dey, Kulojyoti Lahkar, Anwaruddin Choudhury.

KEY REFERENCES

- Barua, M. (1995) Bird observations from Chakrashila Wildlife Sanctuary and adjacent areas. *Newsletter for Birdwatchers* 35(5): 93–94.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and World Wide Fund for Nature-Northeast Regional Office, Guwahati. Pp. 240.
- Datta, S., Datta, J.M. and Phukon, M.P. (Eds) (1998) *Chakrashila Wildlife Sanctuary*. Nature's Beacon, Dhubri. Pp. 45.
- Lahkar, K. (2003) Birds of Chakrashila Wildlife Sanctuary and adjacent areas. Pp. 10. Unpubl.
- Lopez, A. and Mundkur, T. (Eds) (1997) *The Asian Waterfowl Census: 1994–1996*. Results of the Coordinated Waterbird Census and Overview of the Status of Wetlands in Asia. Wetlands International, Kuala Lumpur. Pp. 118.
- Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK.

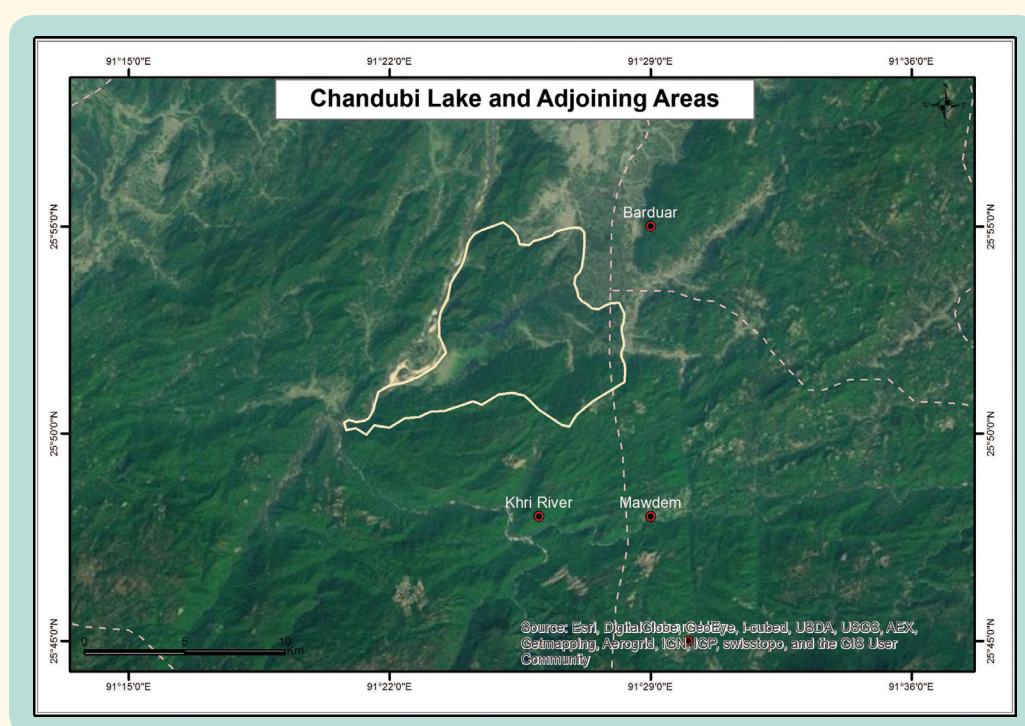
CHANDUBI LAKE AND ADJOINING AREAS

IN-AS-10

IBA Site Code	: IN-AS-10	Altitude	: 70–150 msl
Administrative Region (State)	: Assam	Rainfall	: >2,000 mm
District	: Kamrup	Temperature	: 6 °C to 35 °C
Coordinates	: 25° 52' 00" N, 91° 25' 00" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Freshwater Swamp, Tropical Moist
Area	: >2,000 ha		Deciduous Forest

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

This wetland was formed during the great earthquake of 1897, thus it has immense value as a tectonic lake. It is inside Barduar Reserve Forest in Kamrup district, c. 60 km southwest of Guwahati city, close to the Meghalaya border. Mayang Hill Reserve Forest lies to the south of Chandubi Lake. Being located inside a reserve forest has made it a secluded wetland with low biotic interference, and a potential site for bird conservation. Chandubi Lake covers c. 300 ha and with its magnificent scenery is already on the tourist map. A large number of picnickers throng here every winter, mostly from Guwahati city and nearby areas. With appropriate planning and management, the area could be a major site for ecotourism. The villagers of Rajapara forest village and other fringe villages would also benefit from ecotourism.

The lake is surrounded by low undulating hills covered with Moist Deciduous Forest and patches of Semi-evergreen Forest. *Sal Shorea robusta* is the dominant tree species in the area.

Based on the presence of a number of waterfowl, and its importance in supporting threatened ecological communities (Ramsar Criteria 2), Islam & Rahmani (2008) identified it as a potential Ramsar Site. More information is needed to see how many more Ramsar criteria this site will fulfill. As it is a permanent waterbody, it comes under Ramsar Wetland Type O.

AVIFAUNA

Lesser Adjutant *Leptoptilos javanicus* and Pallas's Fish-eagle *Haliaeetus leucoryphus* are the globally Threatened species found in this lake, which also attracts



ASAD R. RAHMANI

Lesser Adjutant *Leptoptilos javanicus*, a globally Threatened species, is found in good numbers in this IBA

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>

a large number of waterfowl. In the adjoining Tropical Moist Deciduous Forests, White-cheeked Hill-partridge *Arborophila atrogularis*, Mountain Bamboo-partridge *Bambusicola fytchii*, Blyth's Kingfisher *Alcedo hercules*, Blue-throated Barbet *Megalaima asiatica*, White-throated Bulbul *Alophoixus flaveolus*, and Grey Peacock-pheasant *Polyplectron bicalcaratum* are the various biome species of conservation interest.

Detailed investigation of its flora and fauna is required, as this IBA has habitats varying from freshwater wetland to Tropical Moist Deciduous Forest. Based on preliminary reports, we have two Vulnerable species but many more are likely to be present.

OTHER KEY FAUNA

Among mammals, we see Slow Loris *Nycticebus bengalensis*, Assamese Macaque *Macaca assamensis*, Rhesus Macaque *M. mulatta*, Capped Langur *Trachypithecus pileatus*, Hoolock Gibbon *Hoolock hoolock*, Dhole or Wild Dog *Cuon alpinus* (occasional), Asiatic Black Bear *Ursus thibetanus*, Yellow-throated Marten *Martes flavigula*, Hog-badger *Arctonyx collaris*, Ferret-badger *Melogale* sp., Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Leopard *Panthera pardus*, Tiger *P. tigris* (occasional), Asiatic

Elephant *Elephas maximus*, Wild Boar *Sus scrofa*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, Serow *Capricornis rubidus* (rare), Malayan Giant Squirrel *Ratufa bicolor*, Irrawaddy or Himalayan Hoary-bellied Squirrel *Callosciurus pygerythrus*, Hoary Bamboo Rat *Rhizomys pruinosus*, Chinese Porcupine *Hystrix brachyura*, Chinese Pangolin *Manis pentadactyla*, and Rufous-tailed Hare *Lepus nigricollis ruficaudatus*. There are also unconfirmed reports of the Pig-tailed Macaque *Macaca nemestrina leonina*, Stump-tailed Macaque *M. arctoides*, and Clouded Leopard *Neofelis nebulosa* (Choudhury 2003).

LAND USE

- Forest
- Agriculture
- Fishing

THREATS AND CONSERVATION ISSUES

- Siltation
- Fishing
- Felling of trees
- Encroachment

There is a long-pending proposal to declare the area a wildlife sanctuary, totaling c. 50 sq. km, including Chandubi Lake, most of Mayong Hill RF, and part of Barduar RF (Choudhury 1989).

Like all the wetlands of Assam, Chandubi also faces poaching, extensive fishing, siltation, and massive encroachment. If properly protected, Chandubi Lake has great potential to attract thousands of waterbirds. Pallas's Fish-eagle is seen in this lake, which proves that the habitat is still suitable as a waterbird refuge. Better protection from poaching and illegal fishing would make this IBA a great waterbird sanctuary.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Choudhury, A.U. (1989) The Primates of Assam, their distribution, habitat and status. Unpublished Ph.D. thesis, Guwahati University. Pp. 300 + maps.
- Choudhury, A.U. (2003) Chandubi lake should be declared a protected area. Proposal submitted to Government of Assam. 1 p. Unpubl.
- Islam, M.Z. and Rahmani, A.R. (2008) *Potential and Existing Ramsar Sites in India*. Indian Bird Conservation Network: Bombay Natural History Society, BirdLife International and Royal Society for the Protection of Birds. Oxford University Press. Pp. 592.

DEOBALI JALAH

IN-AS-11

IBA Site Code	: IN-AS-11
Administrative Region (State)	: Assam
District	: Nagaon
Coordinates	: 26° 15' 00" N, 92° 15' 30" E
Area	: c. 1,000 ha

Ownership	: State, Private
Altitude	: 60 msl
Rainfall	: 1,000–1,800 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: Northeast
Habitats	: Freshwater Swamp, Tropical Grassland

IBA CRITERIA: A1 (Threatened species), A4i (≥1% of biogeographic population)

PROTECTION STATUS: Not officially protected. Map not available

GENERAL DESCRIPTION

Deobali Jalah includes a marshy tract with *beels* (wetlands) and grassland in central Assam. Located 15 km south-west of Nagaon town, it is perhaps the last intact grassland which is still unprotected in Nagaon district. The entire area is interspersed with numerous wetlands. The Haria river to the south and the Kollong river to the north form the natural barriers for the grassland, while the other sides are occupied by human habitation.

AVIFAUNA

More than 100 bird species have been identified in this IBA. Some uncommon species found in the area are Jerdon's Bushchat *Saxicola jerdoni*, Bristled Grass-warbler or Grassbird *Chaetornis striatus*, Greater Adjutant *Leptoptilos dubius*, and Lesser Adjutant *Leptoptilos javanicus*. The last three are treated as globally Threatened by Birdlife International (2001). For the Bristled Grassbird, there are only a handful of sites in Assam (Choudhury 2000). Among the winter visitors, Garganey *Querquedula querquedula*, Nothern Pintail *Anas acuta*, and the Near Threatened Ferruginous Duck *Aythya nyroca* are noteworthy. Swamp Francolin *Francolinus gularis* is another Vulnerable species recorded in this IBA.

OTHER KEY FAUNA

Other fauna of the grassland include Golden Jackal *Canis aureus*, Grey Mongoose *Herpestes edwardsi*,

Jungle Cat *Felis chaus*, and different species of turtles.

LAND USE

- Forestry
- Agriculture
- Fishing
- Grazing

THREATS AND CONSERVATION ISSUES

- Collection of reeds and thatch
- Agricultural encroachment
- Pollution from pesticides and other chemicals
- Poaching and trapping
- Excessive fishing
- Grazing of livestock

The main concerns are encroachment by local villagers, excessive collection of reeds and thatch from the grasslands, and seasonal cultivation of paddy in small clearings, which is on the increase with tractors used for ploughing in recent years. Other issues that are seriously threatening the existence of this grassland are poaching of birds and excessive fishing.

KEY CONTRIBUTORS

Shimanta Goswami, Raj Phukan, Ranjan Borthakur, Manas Bhuyan, Nabin Bordoloi, Kandarpa Bordoloi, Jiten Das, Pranab Patar, Bidyut Jyoti Das, Kamal Ch. Bhuyan, Sashidananda Bordoloi, Prasanta Goswami, Diganta Goswami.

REFERENCES

- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and WWF-India, NE Regional Office, Guwahati. Pp. 240.

ENDANGERED

Greater Adjutant *Leptoptilos dubius*

VULNERABLE

Lesser Adjutant *Leptoptilos javanicus*
Swamp Francolin *Francolinus gularis*
Bristled Grassbird *Chaetornis striatus*

NEAR THREATENED

Ferruginous Duck *Aythya nyroca*

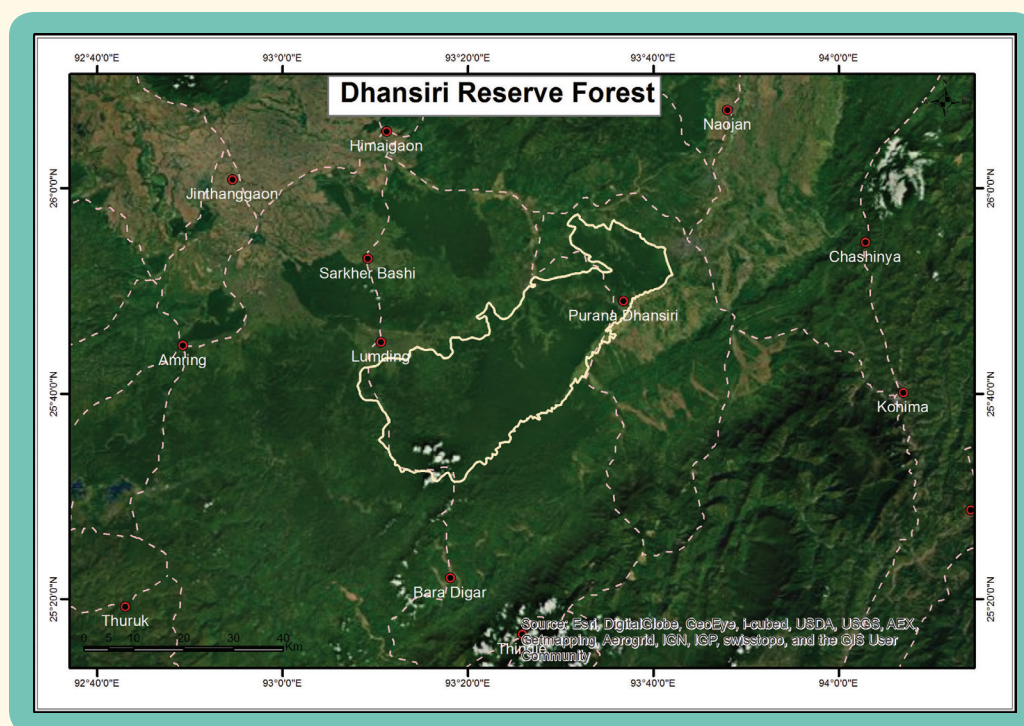
DHANSIRI RESERVE FOREST

IN-AS-12

IBA Site Code	: IN-AS-12	Area	: 86,000 ha
Administrative Region (State)	: Assam	Altitude	: 150–598 msl
District	: Karbi Anglong	Rainfall	: <800–1,500 mm
Coordinates	: 25° 39' 31" N, 93° 27' 17" E	Temperature	: 6 °C to 32 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Moist Deciduous Forest, Tropical Semi-evergreen Forest

IBA CRITERIA: A1 (Threatened species), A4i ($\geq 1\%$ of biogeographic population)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

Dhansiri is the second largest reserve forest in Assam. Located in Karbi Anglong district, bordering Nagaland's Intanki National Park, it is rich in both birds and mammals. Dhansiri and the adjacent reserve forests of Daldali, Barlangpher District Council, and Tamulbari District Council were proposed as a tiger reserve (Choudhury 1992, 1993a, 1998, 2009). The site is already part of Dhansiri-Lungding Elephant Reserve which was notified in 2003.

The area consists of undulating plains to low hills, which are part of Karbi plateau. Because of continuous erosion by the Rivers Dhansiri, Jamuna, Lungding, Borlangpher, Diphu Nala, and others, it has become much lower in elevation than the northern plateau and southern hills. Geographically, the area is known as the Dhansiri Gap. The lowest parts are c. 150 msl. The highest point is 598 m (Thangnangsip) in

Khelma area. The elevation of the major part of the proposed reserve is 200–250 m. Dhansiri river marks the southern and southeastern boundary of the proposed reserve. Other important rivers include the Lungding, Barlangpher, Chhotalangpher, and Diphu Nala. Most of the smaller nullahs become dry during winter.

The climate may be called the tropical monsoon type. Summer is hot and wet, while winter is cool and dry. The area is in the low rainfall zone (actually a rain-shadow zone) of northeastern India.

The forest type is Tropical Moist Deciduous and Tropical Semi-evergreen (Choudhury 1993a). The top canopy consists of *Tetrameles nudiflora*, *Amoora wallichii*, *Artocarpus chaplasha*, *Michelia champaca*, *Mesua ferrea*, *Phoebe goalparensis*, *Gmelina arborea*, *Duabanga sonneratioides*, *Dillenia scabrella*, *Canarium resiniferum*, and *Mansonia*

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
Green Peafowl (extirpated)	<i>Pavo muticus</i>

VULNERABLE

Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Grey-crowned Prinia	<i>Prinia cinereocapilla</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Austen's Brown Hornbill	<i>Anorrhinus austeni</i>
Rufous-vented Prinia	<i>Prinia burnesii</i>

dipikae (endemic to the area). The middle layer consists of *Eugenia jambolana*, *Premna benghalensis*, *Dillenia indica*, *D. scabrella*, *Albizia procera*, and *Emblica officinalis*.

The understorey has *Ziziphus* spp., *Clerodendron* spp., and *Calamus* spp., with *Lantana camara* in the open patches. Abandoned *jhums* (slash-and-burn shifting cultivation practised by the hill tribes) are covered with various grasses such as *Themeda villosa*, *Saccharum procerum*, and *Imperata cylindrica*, and shrubs *Eupatorium odoratum*. In the depressions, herbs like *Alpinia allughas* and grasses *Arundo donax* and *Neyraudia reynaudiana* (both locally called *nal*) occur. Plantations of the Forest Department are mainly Teak *Tectona grandis*, *Gmelina arborea*, and *Albizia procera*.

AVIFAUNA

A rich and diverse birdlife exists in the area. About 250 species have been recorded so far, while there may be more than 350 (Choudhury 1998). The White-winged Duck *Asarcornis scutulata* has been reported from Dhansiri RF (Choudhury 1993a), while there are historical records from near Dhansiri river, near Daldali RF (Godwin-Austen 1874, Hutchinson 1946). In Inglongiri, the ducks have been reported in flight or roosting on trees. In Dhansiri, they were recorded in the lake near Langcholi, just outside the boundary of the reserve forest. There is also an old report from a pool in the upper reaches of the Diphu nullah (Choudhury 1998).

The Burmese or Green Peafowl *Pavo muticus* is now extinct in the area. Five species of hornbills are reported from this IBA: Oriental Pied *Anthraceros albirostris*, Great Pied *Buceros bicornis*, Wreathed *Aceros undulatus*, Rufous-necked *Aceros nipalensis*, and Austen's Brown *Anorrhinus austeni*.

In winter, the abundance of birds increases to a great extent with the arrival of altitudinal migrants and winter visitors. Spot-winged Starling *Saroglossa spiloptera* is seen

in swarms, especially on the northern edge of Dhansiri RF (Choudhury 1998). Fairy Bluebird *Irena puella*, Black Bulbul *Pycnonotus atriceps*, and Grey-winged Blackbird *Turdus boulboul* are abundant all over the site. The birds of Biomes 5, 7, 8, 9, 11, and 12 have been recorded in Dhansiri. They are too many to list here.

Five Near Threatened species are recorded from this IBA, including Blyth's Kingfisher *Alcedo hercules* and Rufous-vented Prinia *Prinia burnesii*.

Among the more common forest birds, notable species are Black or Black-crested Baza *Aviceda leuphotes*, Blyth's Baza or Jerdon's Baza *A. jerdoni*, Pied Falconet *Microhierax melanoleucos*, Green Imperial-pigeon *Ducula aenea*, Mountain Imperial-pigeon *D. badia*, Barred-tailed Cuckoo-dove *Macropygia unchall*, Wedge-tailed Green-pigeon *Treron spheura*, and Thick-billed Green-pigeon *T. curvirostra*.

OTHER KEY FAUNA

The area is exceptionally rich in mammalian fauna. Seven species of primates, i.e., the Hoolock Gibbon *Hoolock hoolock*, Slow Loris *Nycticebus bengalensis*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis*, and Stump-tailed Macaque *M. arctoides* are found (Choudhury 1996b).

Other mammals include Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Marbled Cat *Pardofelis marmorata* (Choudhury 1996a), Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Dhole or Wild Dog *Cuon alpinus*, Asiatic Black Bear *Ursus thibetanus*, Sloth Bear *Melursus ursinus*, Sun Bear *Helarctos malayanus*, Gaur *Bos gaurus*, Wild Water Buffalo *Bubalus arnee* (a small population reported), Serow *Capricornis rubidus*, Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Barking Deer *Muntiacus muntjak*, Binturong *Arctictis binturong*, and Malayan Giant Squirrel *Ratufa bicolor*.

The diversity of reptiles has not been assessed fully, however, a notable species recorded was Keeled Box Turtle *Pyxidea mouhotii* (Choudhury 1993b). Common Monitor *Varanus bengalensis*, Water Monitor *V. salvator*, Indian Rock Python *Python molurus*, King Cobra *Ophiophagus hannah*, Indian Cobra *Naja naja*, Banded Krait *Bungarus fasciatus*, Common Krait *B. caeruleus*, Buffstriped Keelback *Amphiesma stolata*, Common Vine Snake *Ahaetulla nasuta*, and Green Pit Viper *Trimeresurus gramineus* have been recorded. Reticulated Python *Python reticulatus* has also been reported but needs confirmation (Choudhury 1998).

LAND USE

- Forestry
- Cultivation including *jhums* (in encroachments)



DHIRITMAN MUKHERJEE

Dhansiri is the second largest Reserve Forest in Assam and an important habitat for Asiatic Elephant and other species

Capped Langur, Gaur, and a sizeable population of Asiatic Elephant, besides diverse other life forms and mostly pristine habitat.

This area has great tourism potential because of its location near Diphu, the district headquarters of Karbi Anglong. Diphu is connected with Guwahati, the capital of Assam by an all-weather motorable road. Similarly, the bustling city of Dimapur in Nagaland, which has an airport, is also nearby. Lumding, an important railhead of the North East Frontier Railway is also close by. Thus Dhansiri is easily approachable for both domestic and foreign tourists. Trolleys can be used for transport along the railway track that marks the boundary of Dhansiri, Tamulbari, and Daldali RFs (Choudhury 1998).

THREATS AND CONSERVATION ISSUES

- Encroachment
- Poaching
- Illegal felling of trees
- Insurgency

Dhansiri is among the few remaining large areas of tropical forest in northeast India, and needs protected area status. In the whole of Dhansiri RF, encroachment was negligible till the mid-1990s. Subsequently, some encroachment occurred but is still unlikely to be more than 20% of the total area. Although the IBA is located near the Assam-Nagaland border, poaching is surprisingly not a major threat, the main reason being the absence of any major villages across the border. The presence of Intanki National Park (an IBA) in Nagaland also acts as a buffer. However, poaching is rampant there. The local poachers mainly go for deer, occasionally primates, small mammals such as porcupines, birds, and reptiles such as monitor lizards.

Illegal felling of trees and insurgency-related activities are other noteworthy conservation issues. Dhansiri was recommended as a protected area (sanctuary or national park) and tiger reserve, along with its surrounding areas, because it is among the last large wilderness tracts left in Assam. It has large populations of Tiger, Hoolock Gibbon,

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Choudhury, A.U. (1992) Dhansiri Tiger Reserve. Unpublished Report. Pp. 8 + map.
- Choudhury, A.U. (1993a) *A Naturalist in Karbi Anglong*. Gibbon Books, Guwahati.
- Choudhury, A.U. (1993b) Keeled box turtle in Karbi Anglong – a new locality record. *JBNHS* 90: 517.
- Choudhury, A.U. (1996a) The marbled cat *Felis marmorata* Martin in Assam - some recent records. *JBNHS* 93(3): 583–584.
- Choudhury, A.U. (1996b) Survey of primates in some parts of eastern and central Assam. Final Report to ASTEC, Guwahati. Pp. 32 + maps.
- Choudhury, A.U. (1998) *Dhansiri Tiger Reserve*. Revised proposal. The Rhino Foundation for nature in NE India, Guwahati. Pp. 30 + map.
- Choudhury, A.U. (2009) *A Naturalist in Karbi Anglong*. Revised & enlarged 2nd edn, Gibbon Books, Guwahati.
- Godwin-Austen, H.H. (1874) Fourth list of birds principally from the Naga Hills and Munipur, including others from Khasi, Garo and Tipperah Hills. *J. Asiatic Soc. Bengal* 43(2): 151–180.
- Hutchinson, R.E. (1946) The White-Winged Wood Duck. *Asacornis scutulata* (Muller). *JBNHS* 46: 402–403.

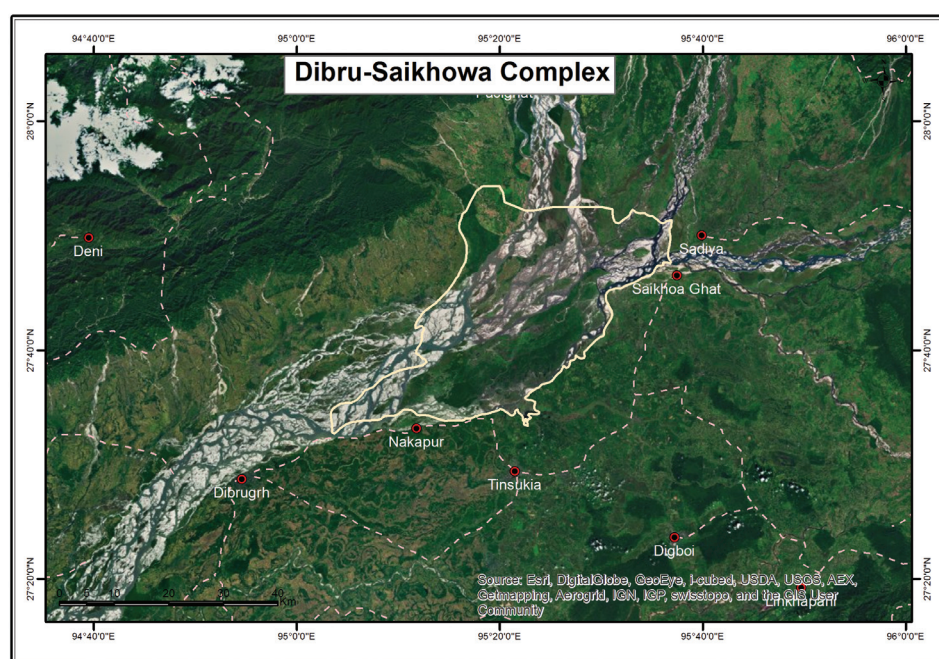
DIBRU-SAIKHOWA COMPLEX

IN-AS-13

IBA Site code	: IN-AS-13	Area	: 80,000 ha
Administrative Region	: Assam	Altitude	: 90–100 msl
(State)		Rainfall	: 2,300–3,600 mm
Districts	: Tinsukia, Dibrugarh, Dhemaji	Temperature	: 6 °C to 36 °C
Coordinates	: 27° 41' 24" N, 95° 21' 00" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland, Salix Swamp

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS: Declared Wildlife Sanctuary 1986. Upgraded to National Park. Declared Biosphere Reserve, 1997.



GENERAL DESCRIPTION

This complex covers Dibru-Saikhowa National Park, Poba Reserve Forest, Kobo *chapor* (river islands) Proposed Reserve Forest and Amarpur *chapor*, and the adjacent riverine tract of the Brahmaputra and Lohit rivers. Maguri and Motapung Beel which were part of this IBA are now listed as a separate IBA owing to their significant ornithological importance. Dibru-Saikhowa NP proper covers 34,000 ha in the districts of Tinsukia and Dibrugarh in eastern Assam. It is 13 km north of Tinsukia town. The area, which is also a Biosphere Reserve, is well-known as a major haunt of the globally Threatened White-winged Duck *Asarcornis scutulata*, Black-breasted Parrotbill *Paradoxornis flavirostris*, and Marsh Babbler *Pellorneum palustre*.

In 1986, the Government of Assam declared Dibru and Saikhowa Reserve Forests as Dibru-Saikhowa Wildlife Sanctuary, covering 64,000 ha which also included Amarpur *chapor* and the adjacent riverine tract of the Brahmaputra and Lohit rivers. Subsequently, the area was upgraded to a national park. However, at the time of final notification as a sanctuary and national park, only the reserve forest areas were included. Maguri and Motapung Beels in Tinsukia district, although very important for the conservation of waterfowl, were excluded. Similarly, Poba and Kobo, important biodiversity sites, are located north of the park in Dhemaji district. We have included all these adjacent sites in the Dibru-Saikhowa Complex IBA.

Dibru-Saikhowa has the largest *Salix* swamp forest in northeastern India. Tropical Moist Deciduous, Tropical

Semi-evergreen, Evergreen Forests, and Grassland form the main habitat types. The original vegetation of the park was tropical rainforest, but a large part sank by a few metres during an earthquake in 1950, causing significant geomorphological changes. Due to regular flooding, the rainforest gradually gave way to deciduous forest and swamps (Choudhury 1998).

The relatively remote Amarapur area, on the northern side of the Brahmaputra river, is not included in Dibru-Saikhowa WLS, but is part of the wider Dibru-Saikhowa Biosphere Reserve. It has significant areas of tall grass, which are largely absent in the rest of the sanctuary. The Amarapur peninsula within the biosphere reserve covers about 3,000 ha. It is generally low-lying and much of it is flooded during the monsoon season (Allen 2002).

Excellent essays on various aspects of Dibru-Saikhowa have been put together in Dwivedi (2009).

AVIFAUNA

Dibru-Saikhowa Complex is very rich in birdlife, with more than 310 species identified earlier (Choudhury 1994, 1997). Now the total is nearly 450 species (Choudhury 2006, 2007; Das 2006). It is one of the sites in the Northeast where the Critically Endangered and elusive White-bellied Heron *Ardea insignis* is seen. Choudhury (2002) saw a lone bird in Sal Beel area in November, 1993. There is no recent record.

The two Critically Endangered *Gyps* species of vultures were not uncommon during 1992–1994, but now both are very rare. During a survey in October 2001, White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *Gyps tenuirostris* were not sighted (Choudhury 2002). According to Sachin Ranade of BNHS, nesting populations of White-rumped and Slender-billed Vultures still exist in the park. The Critically Endangered Red-headed Vulture *Aegypius calvus*, along with Near Threatened Cinereous Vulture *Aegypius monachus* and Himalayan Griffon *Gyps himalayensis*, are occasionally seen in the park.

Two more Threatened species that used to have significant populations in this IBA are White-winged Duck *Asarcornis scutulata* (EN) and Bengal Florican *Houbaropsis bengalensis* (CR). Four nests of White-winged Duck have been recorded. Most of the sightings have been listed in Choudhury (1996) and historic records in Green (1992). The Bengal Florican is a rare resident of the grasslands. There were many sight records from this IBA (Choudhury 2002), but now it is quite rare. One male was seen near Saikhowa in April, 2011 (Sachin Ranade, *in litt.* 2014).

Another Endangered bird of which we have few confirmed records from India is Spotted Greenshank *Tringa guttifer*. Choudhury (2002) reported a lone bird near Dighaltarang on the banks of Dangori river in November, 1993. Two birds were recorded near Dadhia (Choudhury 2006).

CRITICALLY ENDANGERED

White-bellied Heron (no recent record)	<i>Ardea insignis</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Baer's Pochard	<i>Aythya baeri</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
White-winged Duck	<i>Asarcornis scutulata</i>
Spotted Greenshank	<i>Tringa guttifer</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Yellow-breasted Bunting	<i>Emberiza aureola</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Sarus Crane	<i>Grus antigone</i>
Indian Skimmer	<i>Rynchops albigollis</i>
Pale-capped Pigeon	<i>Columba punicea</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Finn's Weaver (Yellow Weaver)	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Lesser Fish-eagle	<i>Ichthyophaga humilis</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyactis</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Himalayan Griffon	<i>Gyps himalayensis</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Eurasian Curlew	<i>Numenius arquata</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula roseata</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill (almost extirpated)	<i>Buceros bicornis</i>
Rufous-vented Prinia	<i>Prinia burnesii</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Marsh Babbler	<i>Pellorneum palustre</i>

The Vulnerable Indian Skimmer *Rynchops albigollis* was recorded historically, and recently it was photographed in the winter of 2013 by Ranjan Kumar Das (*in litt.* 2014).

Baker (1904) had reported a nest of Masked Finfoot *Heliopais personata* in July at Dighaltarang, but Choudhury (2002) could not find any evidence of continued presence of this species.

The tall wet grasslands of Dibru-Saikhowa are important for many globally Threatened and non-threatened species. Stattersfield *et al.* (1998) identified three endemic species in the Assam Plains Endemic Bird Area: Manipur Bush-



DHRITIMAN MUKHERJEE

(above) Dibru-Saikhowa National Park, one of the finest PAs/IBAs in India, is totally neglected although it has varied habitats ranging from Tropical Evergreen Forest to wet grasslands and flooded wooded areas (below). More than 300 bird species have been identified till now including many globally Threatened species



DHRITIMAN MUKHERJEE



RANJAN KUMAR DAS

Black-breasted Parrotbill *Paradoxornis flavirostris* is confined to tall wet grasslands of the Brahmaputra floodplains, and is found in a few pockets in Dibru-Saikhowa

quail *Perdica manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris*, and Marsh Babbler *Pellorneum palustre*. The first species is historically not found in the Brahmaputra floodplains but the remaining two endemics are present. Choudhury (2002) sighted the Marsh Babbler a number of times, mainly in Toralipathar in 1992–1994. The Black-breasted Parrotbill lives in dense tall grass, so sighting it is not easy. Nevertheless, Choudhury (2002) saw two individuals in association with the Rufous-necked Laughingthrush *Garrulax ruficollis* in Amarpur in December 1993.

Another notable record from this IBA was of a pair of Sarus Crane *Grus antigone*, the first sighting of the species in north-east India for several decades. The birds were of the nominate race *antigone* and this record has extended their range by 500 km.

Grey Treepie *Dendrocitta formosa* and Oriental Turtle-dove *Streptopelia orientalis* were found to be resident at lower altitudes (c. 100 m) (Choudhury 1997) than previously recorded by Ali & Ripley (1987).

Jerdon's Babbler *Chrysomma altirostre*, a Vulnerable species of tall wet grasslands, is common in the more extensive habitat in Amarpur (Allen 2002). Puff-throated Babbler *Pellorneum ruficeps* is quite common in the forested areas at Kolomi, and was seen in the same habitat of low bushes at the forest edge as Marsh Babbler; it was also found in Amarpur (Allen 2002). The tall grass of Amarpur is of great value for many restricted-range grassland birds (Allen 2002).

Dibru-Saikhowa is among the most important wintering sites in Assam for the Black Stork *Ciconia nigra* (Choudhury

1997). Excellent reports and papers on the birdlife of this site by Choudhury (1994, 1997, 1998, 2002), show that this IBA has six Critically Endangered, five Endangered, 12 Vulnerable, and 16 Near Threatened species. The site qualifies for A1 (Threatened species) and A2 (restricted-range) criteria. The list of biome-restricted species is too long to be included here. Dibru-Saikhowa is one of the best IBAs of Assam.

OTHER KEY FAUNA

Other fauna includes Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Sloth Bear *Melursus ursinus* (perhaps extirpated), Slow Loris *Nycticebus bengalensis*, Pig-tailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Assamese Macaque *M. assamensis*, Capped Langur *Trachypithecus pileatus*, Barking Deer *Muntiacus muntjak*, Hog Deer *Axis porcinus*, Flying Squirrel *Petaurista* sp., Ganges River Dolphin *Platanista gangetica*, Bengal Monitor *Varanus bengalensis* and Water Monitor *V. salvator*, various turtles including *Kachuga sylhetensis*, snakes including Indian Cobra *Naja kouthia*, and Indian Rock Python *Python molurus*. Assam Roofed-turtle *Pangshura sylhetensis* was also recorded for the first time in the area, demarcating the easternmost limit of its distribution (Choudhury 1994).

LAND USE

- Nature conservation
- Tourism
- Fishing



DHRITIMAN MUKHERJEE

The forest pools in Dibru-Saikhowa used to have a good population of White-winged Duck *Asarcornis scutulata*, but its recent status is not known

THREATS AND CONSERVATION ISSUES

- Logging
- Erosion
- Poisoning of waterbodies
- Cattle grazing
- Disturbance to birds
- Firewood collection

The main conservation issue is diversion of a channel from the Lohit river through Ananta *nullah* (a small channel) in the early 1990s. This has resulted in widening of Ananta *nullah* into a wide river, which ultimately made the national park an island. Large areas have been eroded in the process. Another major issue is the presence of two large forest villages inside the park. Most of the forests have been heavily exploited for timber, and very little dense forest remains. Fishing activities cause considerable disturbance, and there is heavy grazing pressure from domestic livestock. The peripheral areas are being reclaimed for agriculture, and there has been considerable encroachment by the forest villagers. A large portion of the IBA is under threat because of a natural shift in the course of the Brahmaputra river. Local people use chemical pesticides for fishing in the park as well as in Maguri and Motapung Beels, which kills non-target life forms, besides contaminating the catch. Encroachment in Kobo *chapori* has taken alarming proportions.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

Ali, S. and Ripley, S.D. (1987) *Compact Edition of the Handbook of the Birds of India and Pakistan*. Oxford University Press, New Delhi.

- Allen, D. (2002) A bird survey of the Amarpur area of the Dibru-Saikhowa Biosphere Reserve, Assam, India. *Forktail* 18: 87–91.
- Baker, E.C.S. (1904) The occurrence of the Masked Finfoot (*Heliopais personata*) in Lakhimpur. *JBNHS* 16: 156.
- Choudhury, A.U. (1994) Report on Bird survey in Dibru-Saikhowa Wildlife Sanctuary, Assam. Final report to OBC, UK.
- Choudhury, A.U. (1996) Survey of the White-winged Wood Duck and the Bengal Florican in Tinsukia district and adjacent areas of Assam and Arunachal Pradesh. The Rhino Foundation for Nature in Northeast India, Guwahati.
- Choudhury, A.U. (1997) The status of the birds of Dibru-Saikhowa Sanctuary, Assam, India. *OBC Bulletin* 25: 27–29.
- Choudhury, A.U. (1998) Mammals, birds and reptiles of Dibru-Saikhowa wildlife sanctuary, Assam, India. *Oryx* 32(3): 192–200.
- Choudhury, A.U. (2002) Globally threatened birds in Dibru-Saikhowa Biosphere Reserve. *Himalayan Biosphere Reserves* 4(1&2): 49–54.
- Choudhury, A.U. (2006). Birds of Dibru-Saikhowa National Park and Biosphere Reserve, Assam, India. *Indian Birds* 2(4): 95–105.
- Choudhury, A.U. (2007). *Birds of Dibru-Saikhowa National Park*. Gibbon Books & The Rhino Foundation for Nature in North East India, Guwahati, India. 84 pp.
- Das, R.K. (2006). Birds of Dibru-Saikhowa Biosphere Reserve. *Newsletter for Birdwatchers* 46(1): 6–14.
- Dwivedi, K.K. (Ed.) (2009). *Incredible Dibru–Saikhowa National Park*. Dibru–Saikhowa Conservation Society, Tinsukia. 151 pp.
- Green, A.J. (1992) The status and conservation of the White-Winged Wood Duck *Cairina scutulata*. IWRB Special Publication 17, Slimbridge, UK.
- Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK.

DEEPOR BEEL SANCTUARY

IN-AS-14

IBA Site Code : IN-AS-14

Area : 414 ha

 Administrative Region : Assam
(State)

Altitude : 53 msl

Rainfall : >2000 mm

District : Kamrup Metropolitan

Temperature : 7 °C to 37 °C

Coordinates : 26° 07' 00" N, 91° 40' 29" E

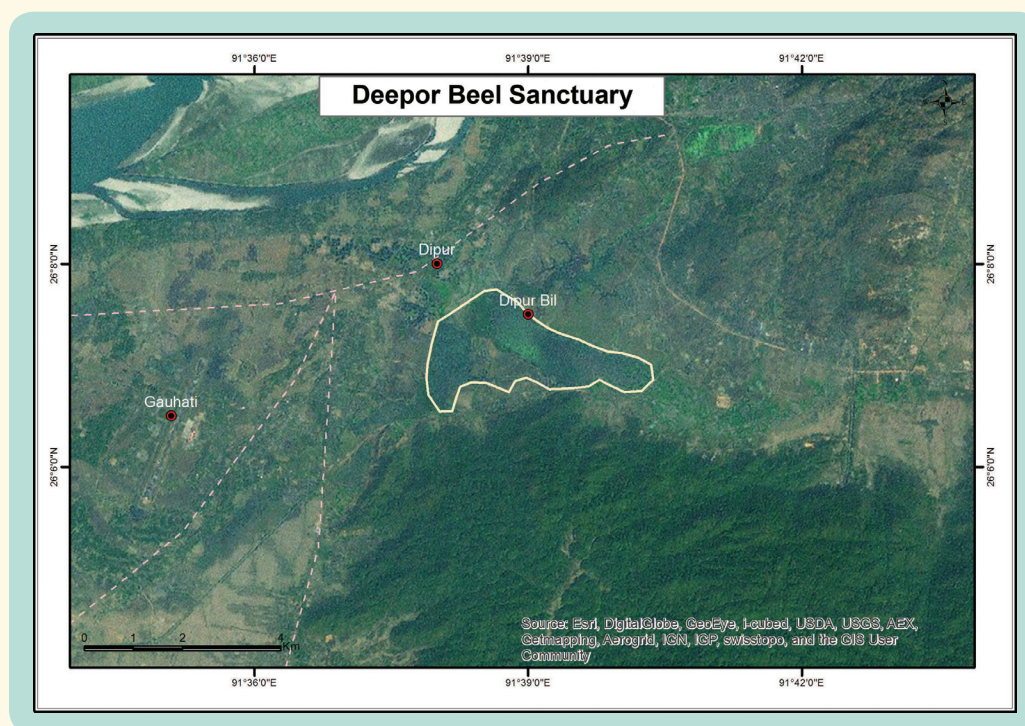
Biogeographic Zone : Northeast

Ownership : State

Habitats : Freshwater Swamp

IBA CRITERIA: 1 (Threatened species), A4iii (≥20,000 waterbirds)

PROTECTION STATUS: Wildlife Sanctuary, established in January 1989. Declared Ramsar Site.



GENERAL DESCRIPTION

Deepor Beel Sanctuary, within Guwahati city, is located in Kamrup Metropolitan district, on the southern bank of the Brahmaputra river. The sanctuary is a permanent freshwater lake with abundant aquatic vegetation. Deepor Beel is one of the largest of many such lakes or *beels* in lower Assam. A Ramsar site, Deepor Beel covers an area of c. 900 ha. At maximum flooding, it is c. 4 m deep, while during the dry season, the depth drops to c. 1 m. The main sources of water of this lake are the Basistha and Kalamoni rivers, and local monsoon run-off between May and September. This *beel* drains into the Brahmaputra river, located about 5 km away. About half of the *beel* dries out during the winter and the exposed shores are converted into paddyfields. The southern side of the lake is contiguous with Rani Reserve Forest. The climate is humid and tropical, with a prolonged monsoon season from May to September, and a relatively cool winter.

A large variety of tropical wetland flora are found in Deepor Beel and its adjoining areas. On one side, this IBA is surrounded by forest, with *Terminalia bellirica*, *Tectona grandis* (plantation), *Ficus bengalensis*, and *Bombax malabaricum* as dominant tree species. Dominant aquatic plants include *Eichhornia crassipes*, *Pistia stratiotes*, *Ottelia alismoides*, and *Lemna minor*. The Giant Water Lily *Euryale ferox* is of considerable botanical and economic importance. Most of the surrounding areas are under rice cultivation.

AVIFAUNA

Around 150 species of birds have been recorded so far in and around the sanctuary, including nine Threatened species (A.U. Choudhury, *pers. comm.* 2002). Barman *et al.* (1995) studied the avifauna of this IBA and found 62 species of waterbirds, including 16 species of Anatidae. Interestingly, they also mention 1,018 individuals of Baer's Pochard



Despite being a Ramsar Site Deepor Beel is in a sorry state with intensive fishing, encroachment, and general neglect. With proper protection it can become a major tourist site and also an important habitat for waterbirds

Aythya baeri in their 1988–1989 survey, but subsequently the population declined to 250 in 1989–1990, only three in 1990–1991, 135 in 1991–1992, and none in 1992–1993. If the figure for 1988–1989 is correct, it must be the largest known flock of this rare species ever reported from India. But these high figures for Baer's Pochard were apparently misidentification and confusion with Ferruginous Duck, as it is almost impossible to see such numbers anywhere in north-east India.

CRITICALLY ENDANGERED

Baer's Pochard	<i>Aythya baeri</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>

Deepor Beel harbours many species of migratory birds in winter, as well as resident birds. But birds are highly disturbed due to heavy fishing, starting from end December to cater to New Year festivities and the Assamese *Magh Bihu* festival in mid-January. Though Deepor Beel is leased out every year and fishing is a year-round activity, disturbance touches a peak by the end of December, as the locals also start community fishing for feasts after harvest. Poaching of waterfowl occurs, but it is not a major threat (K. Lahkar, pers. comm. 2003).

White-rumped *Gyps bengalensis* and Slender-billed *Gyps tenuirostris* Vultures were regularly seen till the end 1990s, but now they are only seen occasionally. The other vulture found in the IBA is Himalayan Griffon *Gyps himalayensis* in winter.

The Greater Adjutant *Leptoptilos dubius*, listed as Endangered, is regularly seen at garbage dumps near Deepor Beel. Its cousin, the Lesser Adjutant *Leptoptilos javanicus*, listed as Vulnerable (BirdLife International 2014), is also seen in the beel.

Ferruginous Duck *Aythya nyroca* is commonly seen in winter. A total of 688 birds were counted on January 4, 1991 during the Asian Waterfowl Census (Choudhury 2000). A good population of Large Whistling Duck or Fulvous Duck *Dendrocygna bicolor* is found in the beel (Das et al. 2011).

OTHER KEY FAUNA

Despite Deepor Beel's proximity to the sprawling Guwahati city and nearby settlements, the Asiatic Elephant *Elephas maximus* regularly visits the *beel*. In the nearby Rani RF and other forested areas, mammals such as Hoolock Gibbon *Hoolock hoolock*, Assamese Macaque *Macaca assamensis*, Rhesus Macaque *Macaca mulatta*, Capped Langur *Trachypithecus pileatus*, Slow Loris *Nycticebus bengalensis*, Leopard *Panthera pardus*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, three species of Civet (Large Indian *Viverra zibetha*, Small Indian *Viverricula indica*, and Palm *Paradoxurus hermaphroditus*), Mongoose *Herpestes* sp., Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, and Chinese Pangolin *Manis pentadactyla* have been recorded.

LAND USE

- Agriculture
- Fishing
- Nature conservation
- Water management

THREATS AND CONSERVATION ISSUES

- Siltation
- Heavy fishing
- Pollution from city effluents
- Disturbance to birds
- Trapping during winter
- Railway line
- Industrial pollution from wool mill
- Encroachment

Areas surrounding Deepor Beel are privately owned, except for Rani Reserve Forest, which is state-owned (Saikia *et al.* 2014). The Government of Assam declared 414 ha of the Deepor Beel area as a sanctuary. Shooting and bird trapping are prohibited by the Indian Wildlife (Protection) Act, 1972, but enforcement is lacking. Being close to a city of about two million humans, biotic pressure on this IBA is increasing. The railway line that passes through the southern edge of the *beel* has damaged the ecosystem. There is a constant threat to denotify the sanctuary, although it may not be



Construction of railway line nearly 20 years ago has disrupted the movement of Elephants which come to Deepor Beel for water and forage

ASAD R. RAHMAN

so easily done, due to strict guidelines formulated by the Supreme Court of India.

Deepor Beel is sometimes heavily infested with Water Hyacinth. Fishing is another major conservation issue, especially during the mass fishing season when a large number of fishermen descend on this *beel*, create intolerable noise, and disturb the birds. There are a number of rock quarries right near the boundary, which are a major conservation concern.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar, Prasanta Saikia.

KEY REFERENCES

- Barman, R., Saikia, P., Singha, H.C., Talukdar, B.K., and Bhattacharjee, P.C. (1995) Study on the population trend of waterbirds at Deepor Beel Wildlife Sanctuary, Assam. *Pavo* 33(1&2): 25–40.
- BirdLife International (2014) IUCN Red List for birds. Downloaded from <http://www.birdlife.org>
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and WWF-India, NE Regional Office, Guwahati. Pp. 240.
- Das, J., Deka, H., and Saikia, P.K. (2011) Diurnal activity budgeting of Large Whistling Teal *Dendrocygna bicolor* (Vieillot, 1816) (Anseriformes: Anatidae) in Deepor Beel wetlands, Assam, India. *J. Threatened Taxa* 3(12): 2263–2267.
- Saikia, M.K., Saikia, P.K., and Bhatta, R. (2014) Management perspectives for avian population conservation and enrichment in Deepor Beel Ramsar Site, north-east India. *J. Global Biosciences* 3(2): 428–451.

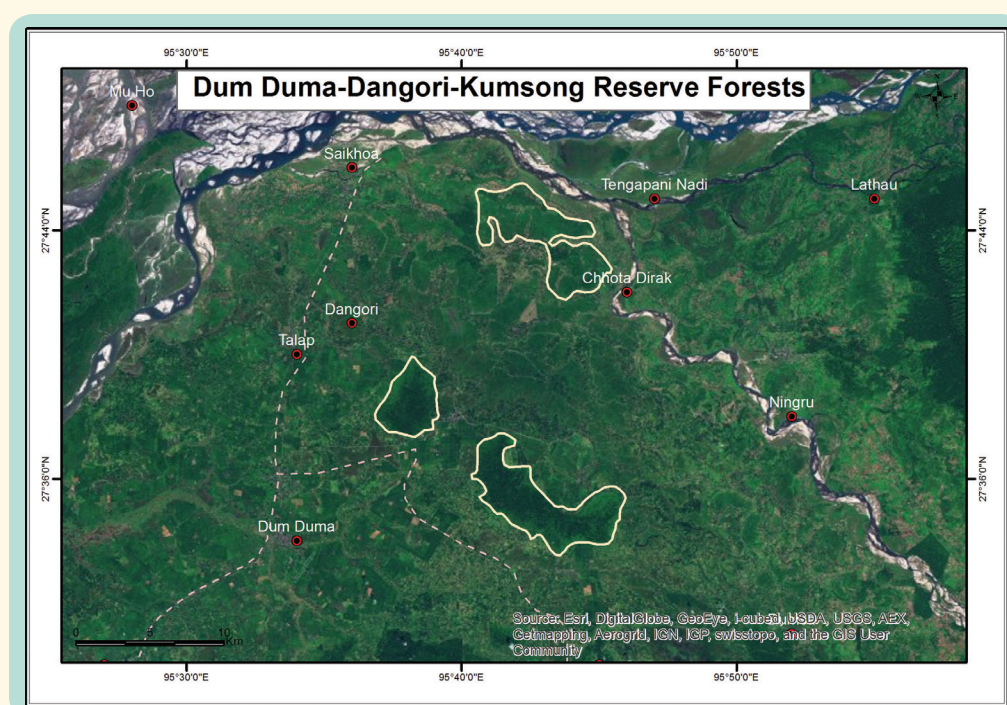
DUM DUMA, DANGORI, & KUMSONG RESERVE FORESTS

IN-AS-15

IBA Site Code	: IN-AS-15	Area	: 6,050 ha
Administrative Region (State)	: Assam	Altitude	: 140 msl
District	: Tinsukia	Rainfall	: 2,300–4,000 mm
Coordinates	: 27° 39' 30" N, 95° 43' 30" E	Temperature	: 7 °C to 35 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Tropical Wet Evergreen Forest

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

Three reserve forests in Tinsukia district, in eastern Assam, Dum Duma (2,880 ha), Dangori (920 ha), and Kumsong (2,250 ha), constitute this IBA. The forests of all these areas are Tropical Evergreen Rainforest dominated by Hollong *Dipterocarpus macrocarpus* on flat plains. All these areas are surrounded by tea gardens and human settlements. These forests are known for their population of White-winged Duck *Asarcornis scutulata*, but are also important for other wildlife, especially primates.

The vegetation type of the IBA is mainly Tropical Evergreen Rainforest, dominated by *Dipterocarpus macrocarpus*, *Shorea assamica*, *Mesua ferrea*, *Terminalia myriocarpa*, *Artocarpus chaplasha*, *Dillenia indica*, *Anthocephalus cadamba*, *Bombax ceiba*, and *Ficus* spp. There are many pools or ponds in these jungles, which are the major haunts of the White-winged Duck.

AVIFAUNA

The site is important for rainforest birds. More than 100 species have been recorded, but more are likely to occur (A.U. Choudhury, *pers. comm.* 2002). The White-winged Duck and Austen's Brown Hornbill *Anorrhinus austeni* are noteworthy species, while there are reports of the Masked Finfoot *Heliopais personata* from Dum Duma RF (Choudhury 1997). Biome 8 (Sino-Himalayan Subtropical Forest) species such as Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, White-throated Bulbul *Alophoixus flaveolus*, Black-winged Cuckooshrike *Coracina melaschistos*, and Nepal Fulvetta *Alcippe nipalensis* are commonly seen.

This site has been selected as an IBA as it is one of the most important areas for the long-term protection of the White-winged Duck. The largest confirmed flock of White-winged Duck in the world was recorded in Dangori RF, where 14 were seen roosting at one site in 1995 (Choudhury 1996, 1998).



THAKUR DALIP SINGH

White-winged Duck *Asarcornis scutulata* has been reported from the Dongori Reserve Forest. The present status of this Endangered bird and its habitat is not fully known

OTHER KEY FAUNA

Mammalian fauna includes Leopard *Panthera pardus*, Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Slow Loris *Nycticebus bengalensis*, Malayan Giant Squirrel *Ratufa bicolor*, Common Giant Flying Squirrel *Petaurista petaurista*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, and a small herd of Wild Water Buffalo *Bubalus arnee* (= *bubalis*). The Asiatic Elephant *Elephas maximus* and Tiger *Panthera tigris* are no longer found here.

LAND USE

- Forest

THREATS AND CONSERVATION ISSUES

- Habitat destruction
- Poaching
- Trapping
- Egg collection and duckling trapping
- Pollution from tea gardens (insecticides)
- Fishing in jungle pools
- Disturbance to the birds

It was proposed that the Dum Duma and Dangori RFs together be declared as a wildlife sanctuary for better protection and management, since both the areas are habitats of the White-winged Duck (Choudhury 1996). Kumsong RF has already been encroached upon to a great extent, and there is also illegal tree felling. Sporadic felling is recorded in Dum Duma and Dangori RFs as well. This site

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Masked Finfoot (?)	<i>Heliopais personata</i>

urgently needs legally protected status to prevent further encroachment and to curtail poaching. Many site areas such as Ghulajan in Dum Duma and Lohali in Dangori have undergone degradation.

Awareness programmes should be taken up among the villagers, tea garden labourers, and management about the importance of these forests for the survival of threatened species.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Choudhury, A.U. (1996) Survey of the White-winged Wood Duck and Bengal Florican in Tinsukia district and adjacent areas of Assam and Arunachal Pradesh. The Rhino Foundation for nature in NE India, Guwahati.
- Choudhury, A.U. (1997) Current status of the Masked Finfoot in India. *Newsletter for Birdwatchers* 37(5): 90–91.
- Choudhury, A.U. (1998) Status and conservation of the white-winged duck in eastern Assam, India. *OBC Bulletin* 28: 14–17.

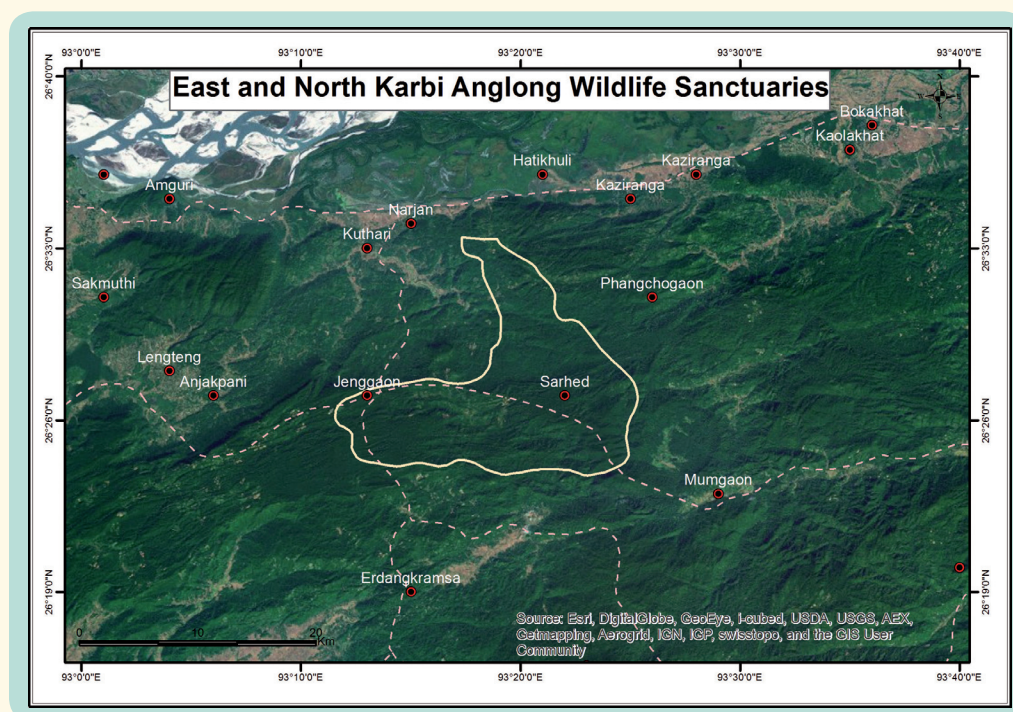
EAST & NORTH KARBI ANGLONG WILDLIFE SANCTUARIES

IN-AS-16

IBA Site Code	: IN-AS-16	Altitude	: 80–500 msl
Administrative Region	: Assam	Rainfall	: >1,800 mm
(State)		Temperature	: 6 °C to 34 °C
District	: Karbi Anglong	Biogeographic Zone	: Northeast
Coordinates	: 26° 28' 00" N, 93° 21' 30" E	Habitats	: Tropical Semi-evergreen Forest, Tropical Moist Deciduous Forest, Tropical Bamboo Brakes
Ownership	: State		
Area	: 31,781 ha		

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Wildlife Sanctuaries, established 2000.



GENERAL DESCRIPTION

This site includes two protected areas in Karbi Anglong district, namely East Karbi Anglong Wildlife Sanctuary (22,181 ha) and North Karbi Anglong Wildlife Sanctuary (9,600 ha), which are contiguous. The latter sanctuary connects the former with the world famous Kaziranga National Park (also an IBA), a link that is vital for the wild Asiatic Elephant *Elephas maximus*. Although the area was proposed as a single protected area as “North Karbi Anglong Wildlife Sanctuary” (Choudhury 1992a, b; 1993), the authorities were compelled to declare two separate sanctuaries. The Mikir Hills Reserve Forest area was notified as East Karbi Anglong WLS, while the unclassified and community forests to the north were notified as North Karbi Anglong WLS, where the rights and concessions of the settlers have to be considered (Choudhury 2009). This IBA is part of the Kaziranga-Karbi Anglong Elephant Reserve.

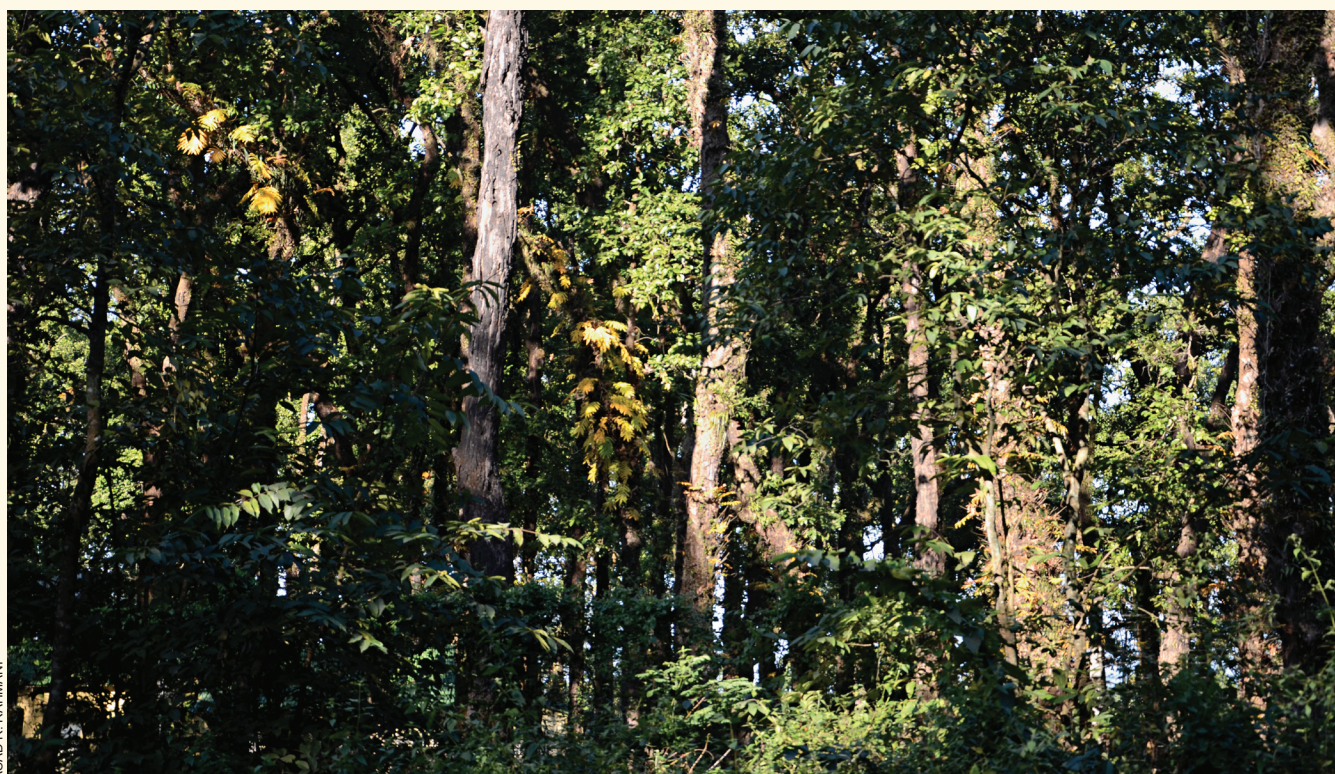
The elevation of the larger part of the proposed IBA is 200–300 msl. Kaliyoni and Diffolu rivers originate from these forests, which have numerous perennial streams.

The forest type is mainly Tropical Semi-evergreen, with patches of Tropical Moist Deciduous. Large tracts under bamboo cover can be seen in parts of North Karbi Anglong Sanctuary due to *jhum* (slash-and-burn shifting cultivation practiced by hill tribes). Abandoned *jhums* have grown over with various grasses such as *Themeda villosa* and *Saccharum procerum*, and scrub. In the depressions, herbs like *Alpinia allughas*, and grasses *Arundo donax* and *Neyraudia reynaudiana* (both called *nal*) occur.

AVIFAUNA

Rich and diverse birdlife exists in the area, and about 200 species have been recorded, while there are likely to be more than 350 (A.U. Choudhury, *pers. comm.* 2002). The

ASAD R. RAHMANI



Karbi Anglong Wildlife Sanctuaries are vital link for the world famous Kaziranga National Park. During annual floods, most of the animals of Kaziranga take refuge in these sanctuaries and reserve forest

White-winged Duck *Asarcornis scutulata* was reported from Kaliyoni area that lies east of East Karbi Anglong WLS (Gee 1958), however, there is no recent report. There are four species of hornbills, the Oriental Pied *Anthraceros albirostris*, Great Pied *Buceros bicornis*, Wreathed *Aceros undulatus*, and Rufous-necked *Aceros nipalensis*. Austen's Brown Hornbill *Anorrhinus austeni* has also been reported, but needs verification. The Rufous-necked Hornbill is extremely rare and it is not known whether it is resident or moves in during winter from Barail Range. The Lesser Adjutant *Leptoptilos javanicus* is seen at the edge of North Karbi Anglong WLS and occasionally in the valley of Langloko, near East Karbi Anglong WLS.

White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* are still seen in small numbers in the northern parts of North Karbi Anglong WLS. Purple Wood or Pale-capped Pigeon *Columba punicea*, listed as Vulnerable, occurs in both sanctuaries.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
Pale-capped Pigeon	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>

The site falls in Biome 9 (Indo-Chinese Tropical Moist Forest), according to the classification of BirdLife International (undated). Important Biome 9 species of this site are: White-cheeked Hill-partridge *Arborophila atrogularis*, Grey Peacock-pheasant *Polyplectron bicalcaratum*, Black-backed Forktail *Enicurus immaculatus*, Himalayan Flameback *Dinopium shorii*, Crow-billed Drongo *Dicrurus annectans*, Necklaced Laughingthrush *Garrulax monileger*, Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, and Sultan Tit *Melanochlora sultanea*.

OTHER KEY FAUNA

This IBA is exceptionally rich in mammalian fauna. Seven species of primates, i.e., Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis*, Stump-tailed Macaque *M. arctoides*, and Slow Loris *Nycticebus bengalensis* are recorded (Choudhury 1996). Other mammals include the Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Sloth Bear *Melursus ursinus*, Clouded Leopard *Neofelis nebulosa*, Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Dhole or Wild Dog *Cuon alpinus*, Asiatic Black Bear *Ursus thibetanus*, Malayan Sun Bear *Helarctos malayanus*, Gaur *Bos gaurus*, Serow *Capricornis rubridus*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, and Malayan Giant Squirrel *Ratufa bicolor*. During floods in Kaziranga, the Sloth Bear, Rhino *Rhinoceros*

unicornis, Wild Water Buffalo *Bubalus arnee* (= *bubalis*), Hog Deer *Axis porcinus*, and occasionally Swamp Deer *Rucervus duvaucelii* take shelter in North Karbi Anglong WLS.

The herpetofauna is very rich, especially frog and snake species, but very little work has been done on these taxa. The Brown Tortoise *Manoura emys* has been recorded. Snakes found are mainly King Cobra *Ophiophagus hannah*, Indo-Chinese Rat Snake *Ptyas korros*, Red-necked Keelback *Rhabdophis subminiatus*, Burmese Rock Python *Python bivittatus*, Copper Trinket Snake *Elaphe radiata*, Green Cat Snake *Boiga cyanea*, Banded Krait *Bungarus fasciatus*, Black Krait *Bungarus niger*, Common Wolf Snake *Lycodon aulicus*, and White-barred Kukri Snake *Oligodon albocinctus*.

Large lizards recorded were Bengal Monitor *Varanus bengalensis* and Tokay Gekko *Gecko gecko*. Small lizards are represented by Bent-toed Gecko *Cyrtodactylus khasiensis* species complex, Flat-tail Gecko *Hemidactylus platyurus*, Spotted Forest Skink *Sphenomorphus maculatus*, and Common Dotted Garden Skink *Lygosoma punctata*.

Frogs like Suffry Tree Frog *Rhacophorus suffryi*, Himalayan Tree Frog *Polypedates himalayensis*, Pied Warty Frog *Theloderma asperum*, Giant Tree Frog *Rhacophorus maximus*, Taipeh Frog *Hylarana taipehensis*, Assam Forest Frog *Sylvirana leptoglossa*, and Horned Frog *Xenophrys* sp. were recorded from the area.

According to Monsoon Jyoti Gogoi (*pers. comm.* 2014), nearly 350 butterfly species have been reported till now from East and North Karbi Anglong WLS, but the diversity is likely to be more than 400. The area is extremely rich in Skippers and Blues. Swallowtail butterflies are not as numerous. Among the Skippers, Forest Bob *Scobura cephalo*, Large Forest Bob *Scobura cephaloides*, Yellow Banded Palmer *Lotongus sarala*, Purple Lancer *Salaenomina fuscicornis*, and Swinhoe's Flat *Celaenorrhinus zea* are some remarkable species. Purple Lancer *Salaenomina fuscicornis* has very restricted distribution, occurring between 70–90 msl, and till now has been reported only from Kaziranga-Karbi Anglong landscape and Cachar Hills of northeast India. Swinhoe's Flat is endemic to Sikkim and Karbi-Meghalaya.

Rare lycaenids include Banded Lineblue *Prosotas aluta*, Cachar Flash *Artipe skinneri*, Green Flash *Artipe eryx*, Elwes' Silverline *Spindasis elwesi*, Witch *Araotes lapithis*, White Banded Royal *Dacalana cotys*, Double Tufted Royal *Dacalana penicilligera*, Broadtail Royal *Creon cleobis*, Dark Blue Royal *Pratapa icetas*, and Malayan Bushblue *Arhopala ammonides elira*. Cachar Flash *Artipe skinneri* is endemic to Karbi Anglong and Cachar (Assam), Meghalaya, and Manipur. Riodinids like Tailed Judy *Abisara neophron* occur in slightly higher areas.

The most interesting Nymphalid butterfly found is Peal's Palmfly *Elymnias pealii*, which is endemic to Brahmaputra valley and Kachin states of northeast India. Other significant Nymphalids include Dot Dash Sergeant *Athyma kanwa* and

Pale Green Sailer *Neptis zaida manipuriensis*. Among the Swallowtails, Common Batwing *Atrophaneura varuna*, Lesser Batwing *Atrophaneura aidoneus*, Common Peacock *Papilio bianor*, White Dragontail *Lampropterus curius* occur. Among the Pierids, Painted Sawtooth *Prioneris sita* and Bath White *Pontia daplidice* are significant.

LAND USE

- Forestry
- Cultivation, including *jhum*

THREATS AND CONSERVATION ISSUES

- Cultivation
- Illegal felling of trees
- Poaching
- Encroachment
- Insurgency

The rights and concessions of settlers in North Karbi Anglong WLS have not yet been settled. This is a major issue, as adequate conservation measures are not possible without settlement of such cases. Recently, the Principal Secretary to the Karbi Anglong Autonomous Council informed the State IBCN Coordinator that hearings have been completed and the final notification can be issued in the near future (Jayashree Daolagupu, *pers. comm.* to A.U. Choudhury 2014). East Karbi Anglong WLS is virtually inaccessible, which has helped natural protection, but made management difficult. *Jhum* is also a major issue. Illegal felling of trees, insurgency, and poaching are other noteworthy conservation issues.

This area has great tourism potential because of its location near Kaziranga, and also for its innumerable waterfalls, especially in East Karbi Anglong WLS.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Monsoon Jyoti Gogoi, Garga Mohan Das, Bitupan Borah.

KEY REFERENCES

- BirdLife International (undated) *Important Bird Areas (IBA) in Asia: Project Briefing Book*. BirdLife International, Cambridge, UK. Unpubl.
- Choudhury, A.U. (1996) Survey of primates in some parts of eastern and central Assam. Final Report to ASTEC, Guwahati. 32 pp. + maps.
- Choudhury, A.U. (1992a) Dhansiri Tiger Reserve. A proposal submitted to the Karbi Anglong District Council and Government of India. 8 pp + map.
- Choudhury, A.U. (1992b) Singhason Biosphere. A proposal submitted to the Karbi Anglong District Council and Government of India. 6 pp + map.
- Choudhury, A.U. (1993) *A Naturalist in Karbi Anglong*. Gibbon Books, Guwahati. Pp. 78.
- Choudhury, A.U. (2009) *A Naturalist in Karbi Anglong*. Revised & enlarged 2nd edn. Gibbon Books, Guwahati.
- Gee, E.P. (1958) The present status of the White-winged Wood Duck *Cairina scutulata*. *JBNHS* 55: 569–574.

GARAMPANI, NAMBOR, & DOIGRUNG

IN-AS-17

IBA Site Code : IN-AS-17

Administrative Region : Assam
(State)

Districts : Karbi Anglong, Golaghat

Coordinates : 26° 25' 16" N, 93° 43' 50" E

Ownership : State

Area : 14,020 ha

Altitude : 100–120 msl

Rainfall : > 2,000 mm

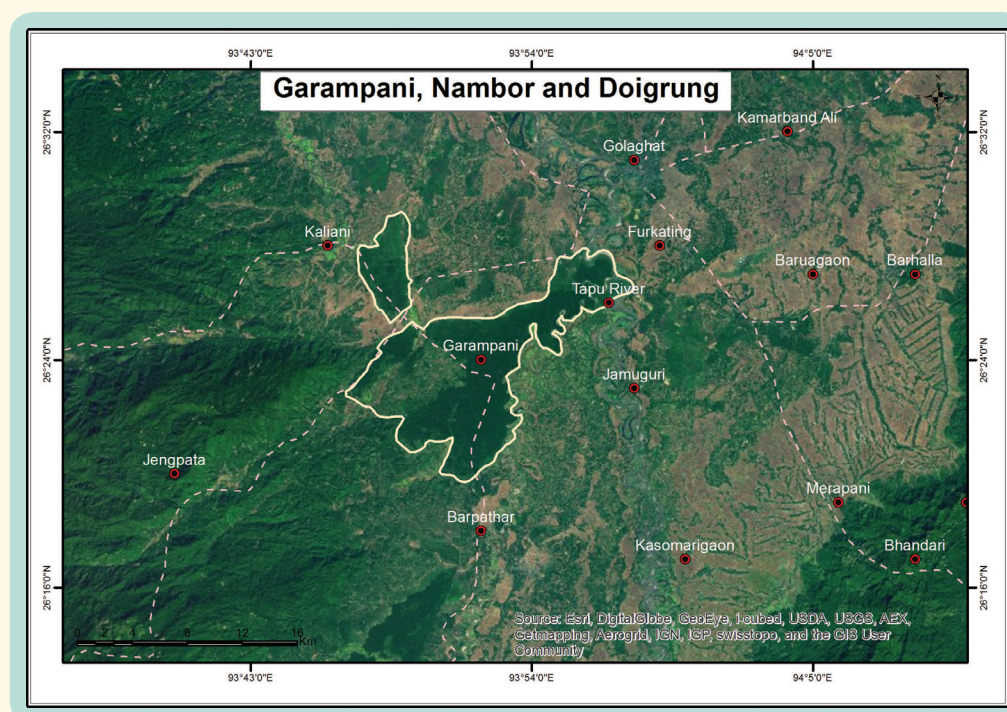
Temperature : 6 °C to 36 °C

Biogeographic Zone : Northeast

Habitats : Tropical Semi-evergreen Forest

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Garampani Wildlife Sanctuary, established July, 1952; Nambor Wildlife Sanctuary, established 2000; Nambor-Doigrung Wildlife Sanctuary, established 2003.



GENERAL DESCRIPTION

This site comprises Garampani (605 ha) and Nambor (3,700 ha) Wildlife Sanctuaries in Karbi Anglong district, and Nambor-Doigrung Wildlife Sanctuary (9,715 ha) in Golaghat district. The area is low undulating country, being at the edge of an Archaean plateau called Karbi Plateau. These floodplains of the Dhansiri river bear Tropical Semi-evergreen Forest with pockets of pure Evergreen, interspersed with small forested marshes. The area is known for its hot springs, hence the name Garampani (*garam* = hot *pani* = water). The Nambor forests are important for the Asiatic Elephant *Elephas maximus* and Gaur *Bos gaurus*. Nambor and Garampani were in the news in the early 1990s because of the 'elephant phenomenon', when these wild pachyderms used to stop vehicular traffic in search of food. More than a thousand local tourists visit Garampani every winter for picnics (Choudhury 1993, 2009).

The forest is largely intact, with a closed canopy. The middle storey is dense and the undergrowth includes cane brakes. Figs *Ficus* spp. are common and provide food to many frugivores. The undergrowth is mainly shrubby. Some deciduous trees such as *Shorea robusta* can be seen throughout the area.

AVIFAUNA

More than 160 species of birds have been recorded in the area, including the Endangered White-winged Duck *Asarcornis scutulata* (Choudhury 2000), Near Threatened Great Pied Hornbill *Buceros bicornis*, and Vulnerable Lesser Adjutant *Leptoptilos javanicus* in the adjoining fields. This could be a very important IBA for the conservation of White-winged Duck. Choudhury (2000) estimated a population of 20 ducks in Nambor. As the forest is largely intact, this site is extremely important for the protection of many forest birds.



Golaghat-Dimapur Road passes through Garampani Wildlife Sanctuary. Garampani (hot spring), for which the sanctuary is named, is a popular tourist spot despite a ban on picnicking

ENDANGERED

White-winged Duck *Asarcornis scutulata*

VULNERABLE

Lesser Adjutant *Leptoptilos javanicus*

NEAR THREATENED

Great Pied Hornbill *Buceros bicornis*

of Biome 9 (Indo-Chinese Tropical Moist Forest) and Biome 12 (Indo-Gangetic Plains). Detailed survey is required to know the avian diversity of this IBA.

OTHER KEY FAUNA

Besides the Asiatic Elephant and the Gaur, there are Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Pig-tailed Macaque *Macaca nemestrina*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Slow Loris *Nycticebus bengalensis*, Capped Langur *Presbytis pileatus*, and Hoolock Gibbon *Hoolock hoolock* (Choudhury 1993).

In the past, Gharial *Gavialis gangeticus* was reported from Dhansiri river, but now only a few turtles and snakes, including the King Cobra *Ophiophagus hannah* and Indian Rock Python *Python molurus*, comprise the reptile fauna of this IBA. The area also sustains populations of threatened turtle species such as *Pangshura sylhetensis* (EN), and *Nilssonina hurum* (VU).

LAND USE

- Forest
- Nature conservation
- Tourism
- Agriculture

THREATS AND CONSERVATION ISSUES

- Encroachment
- Vehicular traffic
- Poaching, especially by people from Nagaland
- Illegal felling

A busy national highway passes through the sanctuaries as well as the reserve forest. Wild animals are often crushed to death by speeding vehicles and other wildlife are also disturbed. This IBA is inadequately protected and needs immediate attention.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Mayur Bawri.

KEY REFERENCES

- Choudhury, A.U. (1993) *A Naturalist in Karbi Anglong*. Gibbon Books, Guwahati. Pp. 78.
- Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2009) *A Naturalist in Karbi Anglong*. Revised & enlarged 2nd edn. Gibbon Books, Guwahati.

HOLLONGAPAR GIBBON SANCTUARY

IBA Site Code : IN-AS-18

Administrative Region : Assam
(State)

District : Jorhat

Coordinates : 26° 37' 47" N, 94° 22' 47" E

Ownership : State

Area : 2,098 ha

Altitude : 119 m (average)

Rainfall : 2,000–3,400 mm

Temperature : 6 °C to 34 °C

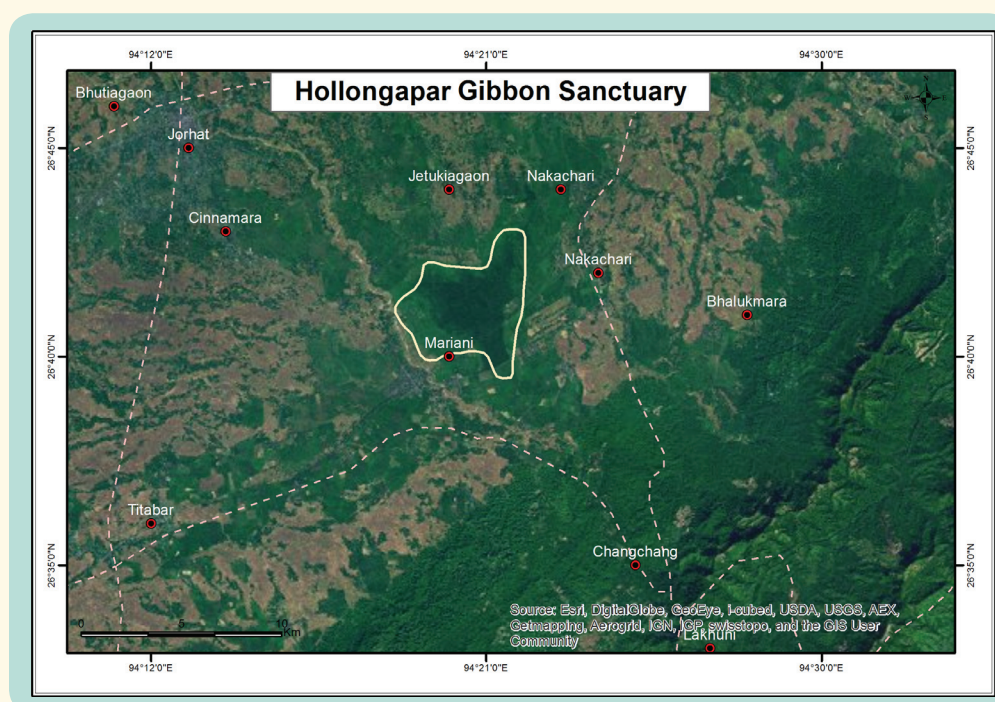
Biogeographic Zone : Northeast

Habitats : Tropical Semi-evergreen Forest

IN-AS-18

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Wildlife Sanctuary, established July, 1997.



GENERAL DESCRIPTION

Hollongapar Gibbon Sanctuary is located in Jorhat district of eastern Assam. It has a history of more than a century as a reserve forest: it was notified on August 27, 1881 as Hollongapar Reserve Forest (Choudhury 1999). This small reserve forest is known for its primate populations and was proposed as a sanctuary mainly for their conservation (Choudhury 1989). The Gibbon Sanctuary is 25 km from Jorhat town, 320 km from Guwahati, and well connected by motorable roads. The sanctuary covers an area of c. 2,000 ha of Tropical Semi-evergreen Forest in the basin of the Brahmaputra river. Hollongapar is known for its populations of Hoolock Gibbon *Hoolock hoolock* and Stump-tailed Macaque *Macaca arctoides*. The first study on gibbons in this forest was carried out by Tilson (1979).

Despite the fact that it is a small area, the forest is still intact. The top canopy of the forest has evergreen trees,

such as *Dipterocarpus macrocarpus*, *Shorea assamica*, *Artocarpus chaplasha*, and *Tetrameles* sp. The second storey also has mostly evergreens, including *Mesua ferrea*, *Sapium baccatum*, and *Amoora wallichii*. Other species seen here are *Dillenia indica*, *Mangifera sylvatica*, *Ailanthus integrifolia*, *Elaeocarpus sphaericus*, *Spondias pinnata*, *Mansonia dipikae*, and *Bombax ceiba* (Ghosh 2007).

AVIFAUNA

Hollongapar was selected as an IBA solely on the basis of the occurrence of the Endangered White-winged Duck *Asarcornis scutulata*. However, other globally Threatened forest species are likely to occur here. Ghosh (2007) recorded 219 species of birds from this IBA and surrounding areas. The forest, though small, and partitioned by a railway line and a *kutchra* road, is still intact. Many forest species are likely to occur here.

OTHER KEY FAUNA

The other fauna of the sanctuary includes Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Leopard Cat *Felis bengalensis*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Chinese Porcupine *Hystrix brachyura*, Chinese Pangolin *Manis pentadactyla*, and Malayan Giant Squirrel *Ratufa bicolor*. Primates recorded were Slow Loris *Nycticebus bengalensis*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Pig-tailed Macaque *M. nemestrina*, Capped Langur *Trachypithecus pileatus*, Large Indian Civet *Viverra zibetha*, Small Indian Civet *Viverricula indica*, Common Palm Civet *Paradoxurus hermaphroditus*, and Western Hoolock Gibbon *Hoolock hoolock* (Choudhury 1999, Ghosh 2007).

Reptile species in the sanctuary include Cat Snake *Boiga trigonata*, Indian Cobra *Naja naja*, and Common Rat Snake *Ptyas mucosus* (Ghosh 2007). Burmese Rock Python *Python molurus bivittatus* is also found here.

LAND USE

- Forestry
- Nature conservation
- Tourism

THREATS AND CONSERVATION ISSUES

- Illegal felling
- Encroachment
- Elephant-human conflict
- Poaching

Hollongapar is an isolated forest patch surrounded by tea plantations and human settlements. Once it was contiguous with a large forest tract that extended to Nagaland. A barrier of tea gardens now separates it from the nearest forest areas of Disoi and Disoi Valley Reserve Forest. Moreover, the habitat in these forests has been badly degraded due to continuous felling and encroachment. There is conflict with Asiatic Elephants, as more than a dozen animals are confined in a small area, and their moving about often creates problems for the villagers and tea garden labourers. There were some good forest patches in the tea estates outside the reserve forest that used to supplement the habitat requirement of some species, including the Elephant, Rhesus Macaque, and Capped Langur. Now most of these

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>
River Tern	<i>Sterna aurantia</i>
Blossom-headed Parakeet	<i>Psittacula roseata</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

areas have been cleared and planted with tea, making them unsuitable for wildlife. Poaching of birds and mammals by poachers from Nagaland and tea garden labourers is another cause of concern for the wildlife in this IBA.

The railway line passing through the forest has created an effective barrier to the movement of the Slow Loris and Hoolock Gibbon. The neighboring tea estates and villages also use the gravel road through the forest that connects Madhupur with Meleng, and this creates disturbance inside the sanctuary.

Conservation actions that need to be taken up urgently are i. regular patrolling along the sanctuary portion of the Mariani–Amguri road, ii. setting up an anti-poaching camp on the main road, iii. legal acquisition of additional land from the adjacent tea estates, and iv. motivation of the villagers and tea garden labourers for conservation.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar, K. Ghosh.

KEY REFERENCES

- Choudhury, A.U. (1989) Primates of Assam: Their distribution, habitat and status. Ph. D. Thesis, Gauhati University, Guwahati. 300 pp + maps.
- Choudhury, A.U. (1999) Primates in Gibbon Sanctuary Assam, India. *Asian Primates* 7(1&2): 4–6.
- Ghosh, K. (2007) Birds of Hoollongapar Gibbon Sanctuary. *Newsletter for Birdwatchers* 47(3): 35–40.
- Tilson, R.L. (1979) Behaviour of Hoolock Gibbons during different seasons in Assam. *JBNHS* 76: 1–16.

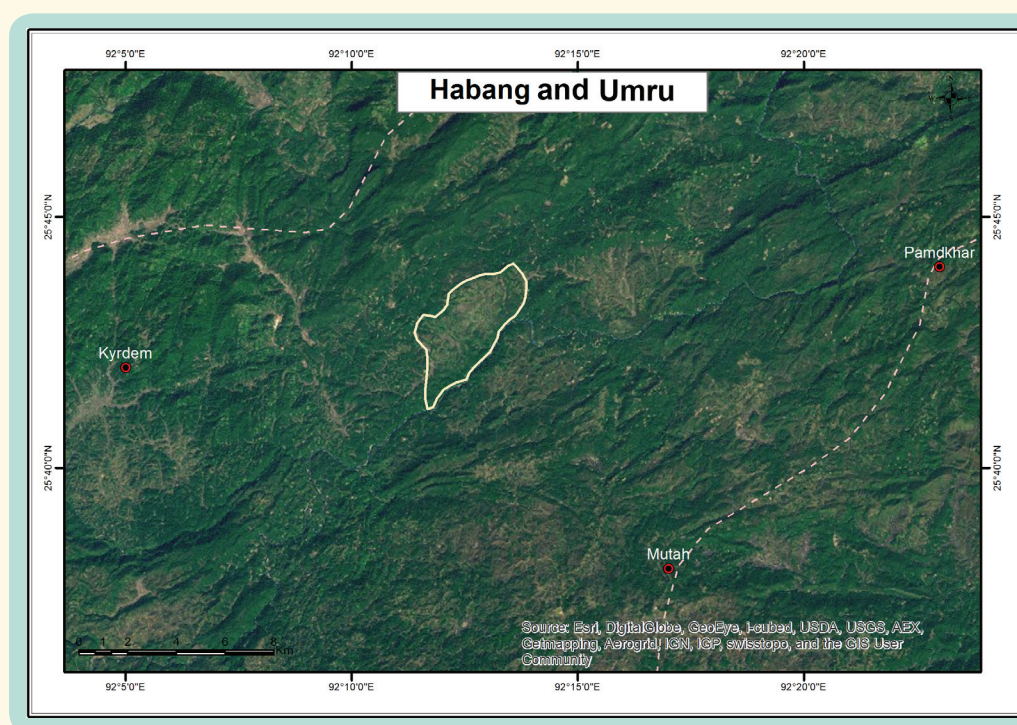
HABANG & UMRU

IN-AS-19

IBA Site Code	: IN-AS-19	Area	: c. 2,000 ha
Administrative Region (State)	: Assam	Altitude	: 700–900 msl
District	: Karbi Anglong	Rainfall	: >1,600 mm
Coordinates	: 25° 48' 00" N, 92° 15' 00" E	Temperature	: 4 °C to 30 °C
Ownership	: Private and Community	Biogeographic Zone	: Northeast
		Habitats	: Montane Grassy Slopes, Tropical Bamboo Brakes

IBA CRITERIA: A4ii ($\geq 1\%$ of the global population of congregatory terrestrial species),
A4ii (exceed thresholds set for migratory species at bottleneck sites)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

Habang (or Umwang) and Umru are relatively remote areas in Assam's Karbi Anglong district. The area comprises a few villages inhabited by the Khasi tribe, with some Nepali-speaking people. A few hutments of the Karbi tribe also exist. The landscape is a plateau with undulating terrain. The Umkhen or Borpani river passes through the southern part of this IBA, beyond which is the state of Meghalaya.

AVIFAUNA

Habang is significant because it is the site of a major congregation of migrating Amur Falcon *Falco amurensis*. This raptor migrates from northeastern China and

southeastern Siberia to southern Africa through northeast India (Ali & Ripley 1987), and congregates in large numbers for night roosting at Habang (Choudhury 2000, 2009). While its abundance is not known, at least 3,000 were found roosting on a single day in late October 2000. Sometimes there are more than 5,000 individuals. The birds move through the area for about a month. Hence, it is possible that more than 90,000 birds pass through the area and roost *en route*. Umru is located westwards of Habang, very close to the state border with Meghalaya, where a large number of birds from Meghalaya have been observed roosting in the last five years. This is one of the few sites that qualify for A4ii criteria ($\geq 1\%$ of the global population of congregatory terrestrial species: BirdLife International, undated).

ASAD R. RAHMANI



Habang (or Umwang) and Umru on the border of Assam and Meghalaya attract nearly 90,000 Amur Falcon during autumn migration, out of which a few thousand are trapped for food

ASAD R. RAHMANI





ASAD R. RAHMANI

With the support of reputed conservationist Dr. Anwaruddin Choudhury and the district administration, BNHS team conducted an environment awareness campaign in 2013 for the protection of Amur Falcon. This campaign needs to continue for many years till Amur Falcon trapping is totally curtailed

The Mountain Bamboo-partridge *Bambusicola fytchii* has been recorded in this IBA. There is a very interesting report of a remnant population of peafowl, probably Indian Peafowl *Pavo cristatus* or the globally threatened Green Peafowl *Pavo muticus*. However, it is yet to be confirmed (A.U. Choudhury, *pers. comm.* 2003).

OTHER KEY FAUNA

The Western Hoolock Gibbon *Hoolock hoolock* used to occur in the nearby forests (A.U. Choudhury, *pers. comm.* 2003). Its current status is not known.

LAND USE

- Human settlement
- Agriculture

THREATS AND CONSERVATION ISSUES

- Hunting of Amur Falcon for food and sale
- Insurgency

The main issue here is the capture of Amur Falcons by the Khasis. Every year, in October-November, the villagers capture the roosting birds, by sitting on a specially made machan erected on stands of bamboo. While many birds are eaten in the villages, some are taken to urban areas such as Shillong for sale.

The local Forest Department and The Rhino Foundation for nature in North East India jointly undertook the first awareness drive. Subsequently, the practice of annual capture has been reduced drastically. Interestingly, no one in the villages, including school teachers and headmen, were aware of the name of the species or its long-distance migration (A.U. Choudhury, *pers. comm.* 2003). In November, 2013, a BNHS team undertook a brief survey and interacted with villagers to reduce the hunting pressure on the Amur Falcons. Owing to insurgency-related problems, the work could not continue.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Amol Sharma and Neha Sinha.

KEY REFERENCES

- Ali, S. and Ripley, S.D. (1987) *Compact Handbook of the Birds of India and Pakistan*. Oxford University Press, Mumbai.
- BirdLife International (undated) *Important Bird Areas (IBAs) in Asia: Project Briefing Book*. BirdLife International, Cambridge, UK. Unpubl.
- Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2009) *A Naturalist in Karbi Anglong*. Revised & enlarged 2nd edn. Gibbon Books, Guwahati.

INNERLINE (EAST), & BARAK RESERVE FORESTS

IN-AS-20

IBA Site Code	: IN-AS-20	Altitude	: 50–600 msl
Administrative Region (State)	: Assam	Rainfall	: 2,400–3,500 mm
District	: Cachar	Temperature	: 7 °C to 35 °C
Coordinates	: 24° 10' 51" N, 92° 30' 04" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Wet Evergreen and Tropical Semi- evergreen Forests
Area	: 62,300 ha		

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

This site covers parts of Cachar district in southern Assam, bordering Mizoram and Manipur. The Innerline Reserve Forest (RF) is the largest reserve forest in Assam, with an area of more than 130,000 ha. Barak RF is contiguous with Innerline RF. The area is mainly composed of low hills that are the northern promontories of the Lushai or Mizo Hills. Small patches of plains found between the hills are mostly under human habitation. Barak, Sonai, and Rukni are the main rivers that irrigate this IBA. These reserve forests, along with some other adjacent reserve forests, were proposed as Dhaleswari Wildlife Sanctuary in the early 1980s. This IBA has a rich diversity of mammals and birds (Choudhury 1983).

The forests are mainly Tropical Wet Evergreen and Tropical Semi-evergreen. The two characteristic tree species

are *Dipterocarpus turbinatus* and *Palaquium polyanthum*. There are vast and continuous stretches of bamboo with cane and reeds. There are some small but excellent patches of tropical rain forest on the plains in Innerline RF.

AVIFAUNA

So far, about 250 species have been listed, including many globally Threatened ones (A.U. Choudhury, *pers. comm.* 2003). The White-winged Duck *Asarcornis scutulata* is still sporadically recorded, but there is no recent report of the Masked Finfoot *Heliopais personata*. There are specimens of this elusive bird in American museums, collected from the northern edge of Innerline RF (BirdLife International 2001).

The Swamp Francolin *Francolinus gularis* has, perhaps, vanished from the area due to encroachment on its grassland habitat for cultivation, while the last confirmed record of

the Green Peafowl *Pavo muticus* in Assam was from Barak RF (Choudhury 2000). Four species of hornbills, Great Pied *Buceros bicornis*, Oriental Pied *Anthracerous albirostris*, Wreathed *Rhyticeros untulatus* and White-throated Brown Hornbill *Anorrhinus austeni* occur in this IBA.

The site lies in Biome 9 (Indo-Chinese Tropical Moist Forest). Some of the major species of this biome are seen here, namely Lesser Necklaced Laughingthrush *Garrulax monileger*, Black-gorgeted Laughingthrush *G. pectoralis*, and Rufous-necked Laughingthrush *G. ruficollis*.

During winter, many birds of other biomes such as Biome 7 (Sino-Himalayan Temperate Forest) and Biome 8 (Sino-Himalayan Subtropical Forest) move in. Notable forest birds are Grey-bellied Tesia *Tesia cyaniventer*, Blyth's Kingfisher *Alcedo hercules*, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckooshrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, White-throated Bulbul *Alophoixus flaveolus*, Black Bulbul *Hypsipetes leucocephalus*, and Grey Peacock-pheasant *Polyplectron bicalcaratum*.

OTHER KEY FAUNA

This IBA site has the highest primate diversity in Assam with eight species (Choudhury 1989, 2013), namely Slow Loris *Nycticebus bengalensis*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Stump-tailed Macaque *M. arctoides*, Assamese Macaque *M. assamensis*, Capped Langur *Trachypithecus pileatus*, Phayre's Leaf Monkey *Trachypithecus phayrei*, and Hoolock Gibbon *Hoolock hoolock*. Other fauna includes Asiatic Elephant *Elephas maximus*, Himalayan Black Bear *Ursus thibetanus*, Malayan Sun Bear *Helarctos malayanus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Barking Deer *Muntiacus muntjak*, Red Serow *Capricornis rubidus*, and Gaur *Bos gaurus*. The Ganges River Dolphin *Platanista gangetica* occurs in Barak river and during monsoon in Sonai river also. There are historic records of the Sumatran

Rhinoceros *Dicerorhinus sumatrensis* and Wild Water Buffalo *Bubalus arnee* (= *bubalis*) (Choudhury 1997, 2001). Among reptiles, there are innumerable past records of the Gharial *Gavialis gangeticus*. Turtles recorded include the Keeled Box *Pyxidea mouhotii* and Eastern Hill or Asian Brown Tortoise *Manouria emys*. Burmese Rock Python *Python molurus* is common, however, the reports of Reticulated Python *P. reticulatus* need further confirmation. King Cobra *Ophiophagus hannah* and other snakes also abound.

LAND USE

- Forest
- Agriculture
- Jhum cultivation

THREATS AND CONSERVATION ISSUES

- Encroachment
- Deforestation
- Unsustainable bamboo harvesting

The site is under heavy biotic pressure, including encroachment, felling of trees, and large-scale, unscientific harvesting of bamboo for paper mills. Poaching, often across the Mizoram border, is also a major issue.

This site bears tropical rainforest, identified as Cachar type by Champion & Seth (1968). This forms one of the largest surviving contiguous belts of reserve forests in the state (Choudhury 1993). These forests are still unprotected, despite being extremely rich in biological wealth. In 1983, a memorandum was submitted to the Government of Assam to declare it as a wildlife sanctuary, but not much has happened during the last 30 years. The proposed sanctuary or national park would cover Innerline RF (whole), Katakai RF (whole), Barak RF (whole), Dohaila RF (part), Longai RF (part), and Tilbhum RF (part). In addition to the reserve forests, a small portion of unclassified state forest areas north of Shingla RF and areas adjoining Innerline RF should also be included. The estimated area of the reserve or sanctuary would be about 167,000 ha, with provision for future expansion (Choudhury 1993). Since this plan was submitted, about 60,000 ha has been encroached. In order to prevent further encroachment, it is absolutely essential that the remaining forest be legally protected soon.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- Champion, H.G. and Seth, S.K. (1968) *A Revised Survey of Forest Types of India*, Govt. of India Press, Delhi. Pp. 403.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Spot-billed Pelican (no recent record)	<i>Pelecanus philippensis</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
White-cheeked Hill-partridge	<i>Arborohila atrogularis</i>
White-throated Brown Hornbill	<i>Anorrhinus austeni</i>
Great Pied Hornbill	<i>Buceros bicornis</i>



DIRTAMAN MUKHERJEE

Tropical wet evergreen and semi-evergreen forest cover the greater part of this IBA. More than 250 bird species, including some globally Threatened species, have been reported from this area

Choudhury, A.U. (1983) Plea for a new wildlife refuge in eastern India. *Tigerpaper* 10(4): 12–15.

Choudhury, A.U. (1989) Primates of Assam: their distribution, habitat and status. Ph.D. Thesis. Gauhati University, Guwahati.

Choudhury, A.U. (1993) Potential Biosphere Reserves in Assam (India). *Tigerpaper* 20(1): 2–8.

Choudhury, A.U. (1997) The status of the Sumatran rhinoceros in north-eastern India. *Oryx* 31(2): 151–152.

Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 16–17, 34.

Choudhury, A.U. (2001) On the occurrence of the wild water buffalo *Bubalus arnee* in the Barak Valley districts of Assam. *JBNHS* 98(2): 270–271.

Choudhury, A.U. (2013) *The Mammals of North East India*. Gibbon Books & The Rhino Foundation with support from COA, Taiwan, Guwahati. 432 pp.

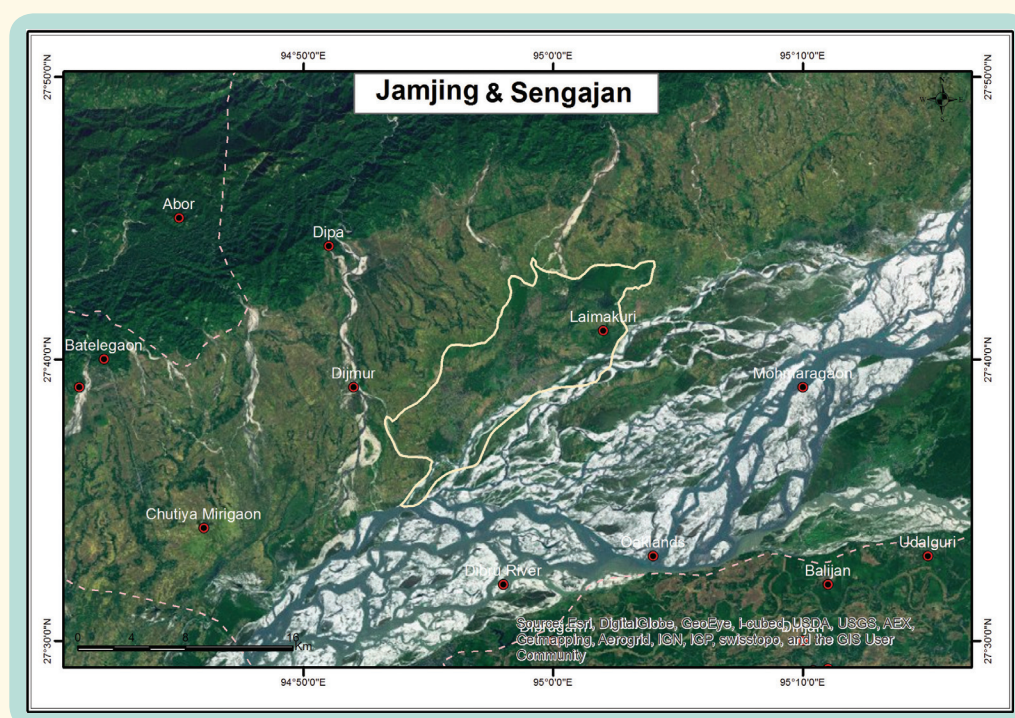
JAMJING & SENGAJAN

IN-AS-21

IBA Site Code	: IN-AS-21	Area	: 9,500 ha
Administrative Region (State)	: Assam	Altitude	: 90–100 msl
District	: Dhemaji	Rainfall	: >2,000 mm
Coordinates	: 27° 35' 17" N, 94° 54' 20" E	Temperature	: 7 °C to 31 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Wooded Grassland, Wetland, Salix Swamp

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

This large grassland-wetland complex in Dhemaji district in eastern Assam is located northwest of Dibru-Saikhowa National Park, on the north bank of the Brahmaputra river. The site comprises two reserve forests, Jamjing (8,000 ha) and Sengajan (1,200 ha). It is accessible from Jonai and Dhemaji towns. The main Jamjing Beel (300 ha) is outside the reserve forest. This poorly known tract had a number of threatened bird species, such as the White-bellied Heron *Ardea insignis* and Near Threatened Spot-billed Pelican *Pelecanus philippensis* (Choudhury 1992, 2000). As in Dibru-Saikhowa NP, *Salix* swamp forest is a feature of this IBA. Large parts of the area have been encroached upon for seasonal cultivation of paddy and mustard.

Tree growth is stunted due to prolonged flooding, but in some parts *Salix* trees are the dominant vegetation. The

margins of the wetland are usually covered with reeds such as *Arundo donax*.

However, during the last decade, the major part of this IBA became permanently encroached, and many encroachers came from the disturbed Assam-Nagaland border. If encroachment is not stopped, we have to list the area as an IBA in Danger.

AVIFAUNA

More than 200 species of birds have been recorded in the area (A.U. Choudhury, *pers. comm.* 2003). There are past records of the White-winged Duck *Asarcornis scutulata*. Swamp Francolin *Francolinus gularis*, Striated Babbler *Turdoides earlei*, and Black-breasted Weaver *Ploceus benghalensis* are some species of Biome 12 (Indo-Gangetic Plain) in which this site falls. Many species from other

biomes are also seen, such as Himalayan Griffon *Gyps himalayensis*, Grey-sided Bush-warbler *Cettia brunnifrons*, Bay Woodpecker *Blythipicus pyrrhotis*, Black-winged Cuckooshrike *Coracina melaschistos*, Red-headed Babbler *Stachyris ruficeps*, and Rufous-necked Laughingthrush *Garrulax ruficollis*.

The Critically Endangered White-bellied Heron *Ardea insignis* is listed, based on an old record. There has been no recent sighting. Although the vultures have declined, White-rumped *Gyps bengalensis* and Slender-billed *G. tenuirostris* still occur in the larger landscape.

The site qualifies for A1 criteria (Threatened species), as it has three Critically Endangered species of vultures, one Endangered species (with old records only), and four Vulnerable species (all with old records). It also has two Near Threatened species. As no work has been done on the birdlife of this site, many more species of these categories are likely to occur here. Surveys are urgently required to update the species status in this IBA.

CRITICALLY ENDANGERED

White-bellied Heron (old record)	<i>Ardea insignis</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>

ENDANGERED

White-winged Duck (old records)	<i>Asarcornis scutulata</i>
---------------------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucorhynchus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>

OTHER KEY FAUNA

Not much is known about the flora and fauna of this area, but Asiatic Elephant *Elephas maximus*, Wild Buffalo *Bubalus arnee* (= *bubalis*) (Choudhury 2010), and Tiger *Panthera tigris* are known to occur occasionally. In the wetland, Fishing Cat *Prionailurus viverrinus*, and Otters *Lutra lutra* and *Lutrogale perspicillata* are found. Chinese

Pangolin *Manis pentadactyla* is also reported to be present, but difficult to see due to its nocturnal behaviour.

LAND USE

- Agriculture
- Fishing
- Forest
- Grazing

THREATS AND CONSERVATION ISSUES

- Encroachment for seasonal cultivation
- Reclamation of wetlands for agriculture
- Excessive fishing
- Siltation
- Destruction of grasslands for paddy and mustard cultivation
- Livestock grazing
- Hunting, trapping, and poisoning of birds

Encroachment for seasonal cultivation was a major issue, but in recent years permanent cultivation in silted up areas has become the more serious problem. Poisoning of birds is also a serious concern. Poor accessibility, at least four hours trek from the highway, has made law enforcement very difficult. Although Jamjing was proposed as a bird sanctuary, it was never considered seriously. Perhaps now, as it has been identified as an IBA, part of it should be protected as a sanctuary. Presence of exotic weeds such as Water Hyacinth *Eichhornia crassipes* in the aquatic bodies poses a threat to the indigenous species of plants and to the aquatic faunal diversity. This site needs better protection, at least for the small pockets that have survived the onslaught of encroachers.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Bikul Goswami.

KEY REFERENCES

- Choudhury, A.U. (1992) Sighting of the Great White-bellied Heron in Jamjing Reserve Forest, Assam. *Newsletter for Birdwatchers* 32(7&8): 17.
- Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2010) *The vanishing herds: the wild water buffalo*. Gibbon Books & The Rhino Foundation, Guwahati with support from COA, Taiwan. 184 pp.

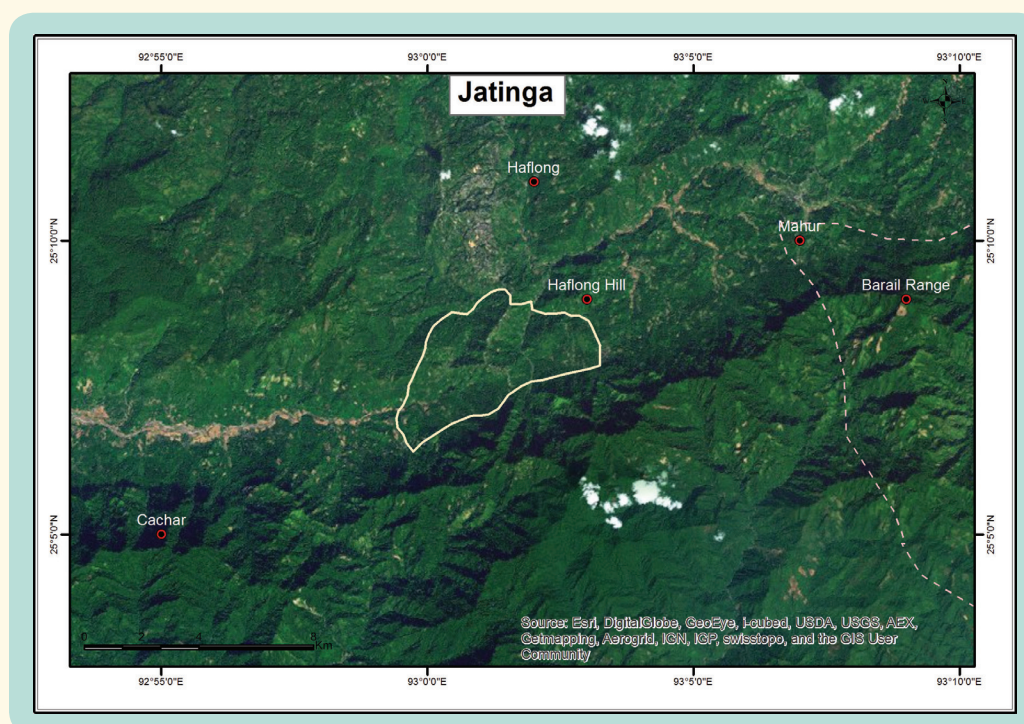
JATINGA

IN-AS-22

IBA Site Code	: IN-AS-22	Altitude	: 500–1,000 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–6,000 mm
District	: North Cachar Hills (Dima Hasao)	Temperature	: 3 °C to 30 °C
Coordinates	: 25° 06' 15" N, 92° 58' 20" E	Biogeographic Zone	: Northeast
Ownership	: Private	Habitats	: Tropical Evergreen Forest, Semi-evergreen Forest, <i>Jhum</i> cultivation, Orchards
Area	: c. 1,000 ha		

IBA CRITERIA: A1 (Threatened species), A4iv (site is known or thought to exceed thresholds set for migratory species as bottleneck sites)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

Jatinga village is located 9 km southeast of Haflong, the district headquarters of North Cachar Hills (Dima Hasao) in central Assam. Logically, it should have been part of the Barail Range IBA, but it has been treated as a separate site because of the unique ornithological phenomenon for which it is famous. Its conservation needs are specific and attention may be diluted if we clump it with the Barail Range IBA.

Jatinga is a big village located on a ridge that extends to the slopes of the main Barail Range. It is the second largest village in the district, with a population of about 2,000. In 1905, some villagers of the Jaintia tribe discovered that birds are attracted to light at night in certain weather conditions, and began using this knowledge to obtain birds for food. It happened that a tiger killed a domestic water

buffalo sometime in September 1905. The villagers went out in search of it with lighted torches on a dark and misty night. They could not trace the carcass, but a rather unusual phenomenon followed. A large number of birds started coming towards them, some even settling on their bodies. The villagers thought that the birds were a gift from God to compensate the loss of the buffalo, and so killed the birds for food. Later on, they discovered that the visit of the birds was an annual phenomenon during certain months. Since then, the phenomenon has been exploited and killing of birds generally starts around mid-August and lasts until the end of October. Some of the essential preconditions for the phenomenon are a dark moonless night, and presence of dense fog or clouds, particularly if there is a slight drizzle. Southwesterly wind also helps to attract the birds to torch

light. At a time when all the above conditions are fulfilled, the villagers sit with petromax lamps and bamboo poles. The birds arrive singly or in small loose groups, and circle above the lights. Some species, such as pittas, land on the ground or house-tops, while species like kingfishers perch in nearby trees or on telephone/electric wires. The ‘hunters’ then hit the birds with the poles. The birds that land on the ground are often caught by hand.

In the past, the haul of one night sometimes reached 500–600 birds, with a maximum of 200 birds per person. But now the peak collection by a single person in a day may be 50–60. About 4,000 birds were reportedly killed in 1997.

The following species are frequently killed: Tiger Bittern or Malayan Night Heron *Gorsachius melanolophus*, Black Bittern *Dupetor flavicollis*, Chestnut Bittern *Ixobrychus cinnamomeus*, Little Egret *Egretta garzetta*, Cattle Egret *Bubulcus ibis*, Indian Pond-heron *Ardeola grayii*, Cotton Pygmy-goose *Nettapus coromandelianus*, Lesser Whistling-duck *Dendrocygna javanica*, Ruddy Kingfisher *Halcyon coromanda*, Oriental Dwarf Kingfisher *Ceyx erithacus*, Hill-partridge *Arborophila torqueola*, Kaleej Pheasant *Lophura leucomelanos*, Yellow-legged Green-pigeon *Treron phoenicopterus*, Emerald Dove *Chalcophaps indica*, Spotted Dove *Streptopelia chinensis*, Lesser Necklaced Laughingthrush *Garrulax monileger*, Hooded Pitta *Pitta sordida*, Indian Pitta *P. brachyura*, White-breasted Waterhen *Amaurornis phoenicurus*, Kora or Watercock *Gallicrex cinerea*, Asian Koel *Eudynamis scolopacea*, Hawk-cuckoo *Hierococcyx* spp., Black Drongo *Dicrurus macrocercus*, Greater Racket-tailed Drongo *D. paradiseus*, and Eurasian Woodcock *Scolopax rusticola*. The majority of the birds killed are usually immature; they are also resident or at the most locally migratory.

The Jatinga bird phenomenon came into the limelight in the 1960s (Gee 1964). Since then, much publicity was given to the fallacy that ‘migratory’ birds commit mass suicide in Jatinga. Now, however, it has become quite clear that they are killed or captured. Of course, a few birds dash against buildings and are injured or even killed.

To make the villagers aware of the importance of conservation, a birdwatching club was formed in 1982. The Forest Department of Assam has also built three birdwatching towers. One tower has floodlights to divert the birds from the hunters’ petromax lanterns. As most of the birds are common, not protected species, it may be difficult to stop the annual killing by legal action. Motivation and awareness among the villagers seem to be the most practical solution. Already, the villagers do not kill the birds on Sundays (most of the villagers are Christian). Killing on Saturdays is also being stopped as part of their growing awareness.

In this bird phenomenon, strong winds play a key role. ‘Jatinga’ is derived from a Naga word meaning ‘pathway of rain and water’. Near Jatinga, the high Barail Range deflects

the southwesterly wind at places. Moreover, the ridge (also called the Jatinga Ridge) separating the Brahmaputra and the Barak basins slopes down and joins the main Barails, resulting in a funnel effect. The southwesterly wind blowing over Jatinga Valley with the high walls of the Barails on both sides suddenly gets an opening at Jatinga, resulting in a channel of very high velocity wind. After crossing the ‘funnel’ at Jatinga Tinali (trijunction) (altitude c. 600 m), it reaches the bowl-shaped Dolong Valley. The floor of the valley is at about 500 m, bounded by a mountain wall of about 1,500 m (Kaukaha peak is 1,736 m) in the south, a dome-shaped hill (sometimes called the Lomromon Hill, highest point 730 m) towards the east, and the Jatinga Ridge (highest part c. 75 m) to the west, its only opening is towards the north. So, wind blowing between 600 and 700 m elevation is channeled through the Tinali (a stretch of about 500 m from the main birdwatching tower to the old Forest Beat Office), but faces the barriers of the three walls. As a result, the entire valley and the Jatinga Ridge remains covered with thick fog, while nearby areas remain clear. In fact, from the western edge of the Khasi Hills to the mountains of the Indo-Myanmar border, a stretch of more than 350 km, Jatinga Valley forms the only gap. Hence, many local migrant birds use it as a flyway, while the gap also allows channeling of wind at a very high velocity. It is probable that many of the birds killed are on local passage between the northern North Cachar Hills and Brahmaputra Valley, and the southern Barak Valley region of the Barails.

There is little doubt that the birds in Jatinga are disturbed in their roosts by the very high velocity wind and thick cover of fog and mist, accompanied by drizzle. It is highly probable that the birds come towards the lights for refuge, as most of them go back to their roosts with the improvement of weather (Choudhury 1986, 2000).

The vegetation of the area is Tropical Evergreen and Semi-evergreen. Forests degraded by *jhum* cultivation are dominant in the immediate vicinity of the village. There are large orange orchards in the village and surrounding areas.

AVIFAUNA

Among the many bird species, the Vulnerable Beautiful Nuthatch *Sitta formosa* is frequently encountered in the adjacent slopes of the Barail Range. The White-winged Duck *Asarcornis scutulata* was recorded only once during the bird killings (Phukan 1987). Green Cochoa *Cochoa viridis* and Purple Cochoa *Cochoa purpurea* are seen in the forests near Jatinga. White-cheeked Hill-partridge *Arborophila atrogularis*, Grey Peacock-pheasant *Polyplectron bicalcaratum*, and Black-gorgeted Laughingthrush *Garrulax pectoralis* are also found in the adjoining forests.

This is one of the few sites in India that was selected on the basis of A4iv criteria (site known or thought to exceed thresholds set for migratory species at bottleneck

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Grey-sided Thrush	<i>Turdus feae</i>
Tawny-breasted Wren-babbler	<i>Spelaeornis longicaudatus</i>
Beautiful Nuthatch	<i>Sitta formosa</i>

sites). Although Jatinga does not truly fulfill the criteria as most of the species found are common and short distance migrants, the phenomenon is so unique that the site needs to be identified as an IBA.

Jatinga was selected for Critical Ecosystems Partnership Fund by Conservation International for research due to the presence of Tawny-breasted Wren-babbler *Spelaeornis longicaudatus* (Chatterjee *et al.* 2006). This small bird is endemic to the hills south of Brahmaputra river, including the Khasi Hills of Meghalaya, North Cachar Hills of Assam and Kedimai in Manipur (Rahmani 2012). It is considered Vulnerable by BirdLife International (2001, 2014).

OTHER KEY FAUNA

Jatinga is rich in other wildlife, notably Slow Loris *Nycticebus bengalensis*, Assamese Macaque *Macaca assamensis*, Stump-tailed Macaque *M. arctoides*, Capped Langur *Trachypithecus pileatus*, Hoolock Gibbon *Hoolock hoolock*, Asiatic Black Bear *Ursus thibetanus*, Clouded Leopard *Neofelis nebulosa*, and Red Serow *Capricornis rubidus*.

Amphibians and reptiles of this IBA include Indian Skipper Frog *Euphlyctis cyanophlyctis*, Forest Lizard *Calotes jerdoni*, Tokay Gecko *Gekko gecko*, Naga-hill Pit Viper *Cryptelytrops erythrurus*, and Chinese Mountain Pit Viper *Ovophis monticola* (Das *et al.* 2009). Rose (2002) reported 180 moth species from this region, out of which *Callopietria exotica*, *Asta quadrilinea*, and *Anereuthina lilach* were recorded for first time in India, and 29 species were recorded for the first time in Jatinga.

Jatinga also serves as a habitat for the Critically Endangered Jungha Mahseer *Tor progenius* (Hussain 2012). This fish is on the verge of extinction due to loss of habitat and indiscriminate fishing.

LAND USE

- Human habitation
- Cash crop plantation and horticulture
- Cultivation

THREATS AND CONSERVATION ISSUES

- Killing of birds
- Slash-and-burn (*jhum*) cultivation
- Timber smuggling

The annual mass killing of birds by the villagers is the main conservation issue. The forest department posts guards during the Jatinga phenomenon to prevent mass killing of birds. They place bright torches to deflect the birds from the 'killing fields'. Jatinga provides a good opportunity for an environmental awareness campaign against mass killing of birds. As the villagers are mostly educated and Jatinga has received a great deal of publicity, an environmental awareness programme would be easy to propagate.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- BirdLife International (2014) IUCN Red List for birds. Downloaded from <http://www.birdlife.org>
- Chatterjee, S., Saikia, A., Dutta, P., Ghosh, D., Pangging, G., and Goswami, A.K. (2006) Biodiversity Significance of North East India for the study on Natural Resources, Water and Environment Nexus for Development and Growth in North Eastern India. WWF-India.
- Choudhury, A.U. (1986) Bird killing at Jatinga. *The Sentinel*, 7 September. Guwahati.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Das, A., Saikia, U., Murthy, B.H.C.K., Dey, S., and Dutta, S.K. (2009) A herpetofaunal inventory of Barail Wildlife Sanctuary and adjacent regions, Assam, north-eastern India. *Hamadryad* 34(1): 117–134.
- Gee, E.P. (1964) *The Wild Life of India*. Collins, London.
- Hussain, B. (2012) Mahseer Fishes of River Barak, Jatinga, Dholeswari and Ganol in North East India. *Research Journal of Recent Sciences* 1: 7–16.
- Phukan, H.P. (1987) Death at Jatinga. Forest Department, Government of Assam, Guwahati.
- Rahmani, A.R. (2012) *Threatened Birds of India: Their Conservation Requirements*. Indian Bird Conservation Network: Bombay Natural History Society, Royal Society for the Protection of Birds and BirdLife International. Oxford University Press. Pp. xvi + 864.
- Rose, H.S. (2002). An inventory of the moth fauna (Lepidoptera) of Jatinga, Assam, India. *Zoos' Print Journal* 17(2):707–721.

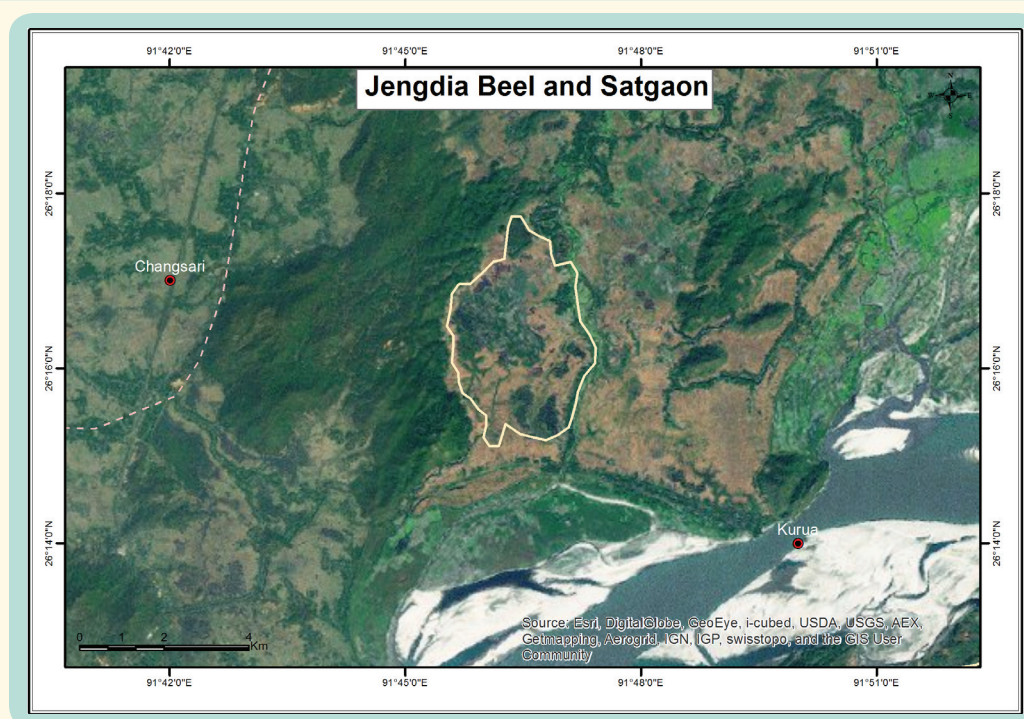
JENG DIA BEEL AND SATGAON

IN-AS-23

IBA Site Code	: IN-AS-23	Area	: c. 500 ha
Administrative Region	: Assam	Altitude	: 45–50 msl
(State)		Rainfall	: >2,000 mm
District	: Kamrup	Temperature	: 7 °C to 36 °C
Coordinates	: 26° 16' 00" N, 91° 46' 00" E	Biogeographic Zone	: Northeast
Ownership	: State, Private	Habitats	: Wetland (freshwater lakes and pools), Human habitation

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected. IBA in Danger.



GENERAL DESCRIPTION

Jengdia or Jaingdia Beel is located north of Guwahati city in Kamrup district. It is a freshwater lake with marshes on the fringe. The IBA lies in the floodplains of the Brahmaputra river. There are hillocks nearby covered with degraded Mixed Scrub and Shrub vegetation. Satgaon village is known for the nesting of Greater and Lesser Adjutants *Leptoptilos dubius* and *L. javanicus*. The village is c. 25 km from Guwahati by road, though it is just 5 km as the crow flies.

AVIFAUNA

Jengdia Beel is known for migratory waterbirds, and Satgaon village for nesting colonies of Greater and Lesser Adjutants. Jengdia is an important foraging ground of the Greater Adjutant in its breeding season. The nearest breeding colony of Greater Adjutant from Jengdia is Dadara Pasariya Singmari nesting colony. Satgaon village is an

important nesting ground for Lesser Adjutant *Leptoptilos javanicus*. In Satgaon village, a breeding colony of nine nests was observed in 2010, seven in 2011, 10 in 2012 in *Bombax ceiba* trees, and eight nests in 2013.

The water level of the wetland goes down from January to March, until the rain starts in April. For a few months, Jengdia becomes dry land. This is when extensive farming has been witnessed here (since the last six years). The farmers leave in May, when the water level rises due to rains.

In 2014, 35 White-rumped Vulture *Gyps bengalensis* were observed near Dol Govind temple. Local people from Jengdia informed that they had often seen vultures this year, and they also sighted more than 60 vultures (species not identified) on one day in the paddyfields near Jengdia. The vultures were seen after many years in this area. Vultures were also seen in 2014 by the locals of Dadara Pasariya and Suwalkuchi villages near Jengdia. On December 13, 2013,



Due to disturbance and encroachment of the habitat, Jengdia Beel is in danger of being totally lost. Among the Critically Endangered species only White-rumped Vulture *Gyps bengalensis* is occasionally seen in the area

eight Steppe Eagle *Aquila nipalensis* were seen in Jengdia. Birdwatchers have reported that Jengdia is an important place for sighting raptors.

OTHER KEY FAUNA

Not many large mammals survive in this area, as it is densely inhabited. However, Leopard *Panthera pardus*, Jungle Cat *Felis chaus*, and Golden Jackal *Canis aureus* are occasionally seen.

LAND USE

- Human habitation
- Agriculture
- Fishing

THREATS AND CONSERVATION ISSUES

- Agricultural intensification and expansion
- Felling of nesting trees
- Siltation
- Excessive fishing

The villagers reported that a tribal community from the hilly areas comes to hunt different species of birds

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
ENDANGERED	
Greater Adjutant	<i>Leptoptilos dubius</i>
VULNERABLE	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle (old record)	<i>Haliaeetus leucoryphus</i>
NEAR THREATENED	
Spot-billed Pelican	<i>Pelecanus philippensis</i>

in Jengdia. They even poison the birds. According to the locals, the tribals even hunted Greater Adjutant and Lesser Adjutant in their area in 2010, although their main target is various migratory and residential duck species. The main threat to Jengdia now is encroachment for Boro crops, felling trees, encroachment for farming and brick industries, overuse of resources, and pollution from agricultural pesticides.

KEY CONTRIBUTORS

Kulojyoti Lahkar, Anwaruddin Choudhury, Purnima Barman, Hilloljyoti Singha.

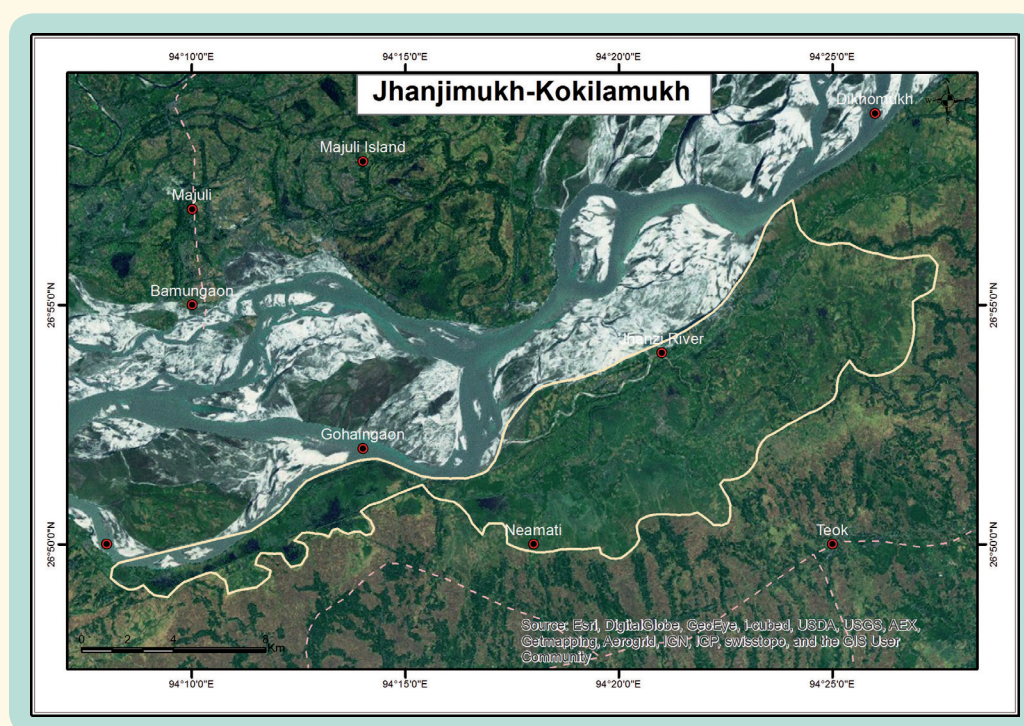
JHANJIMUKH – KOKILAMUKH

IN-AS-24

IBA Site Code	: IN-AS-24	Area	: 2,500 ha
Administrative Region (State)	: Assam	Altitude	: 90 msl
District	: Jorhat	Rainfall	: 2,500–3,500 mm
Coordinates	: 27° 13' 00" N, 94° 28' 00" E	Temperature	: 7 °C to 35 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Seasonal Marsh, Riverine Vegetation

IBA CRITERIA: A1 (Threatened species), A4i (1% of biogeographic population)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

This site includes the riverine tracts of the Brahmaputra river near its confluence with one of its tributaries, the Jhanji. In addition, there are some lakes and marshes such as Dighali, Misamari, Kawoimari, and Laujan, which harbour avifauna. Situated 30 km northeast of Jorhat district headquarters, this wetland complex is an important site for waterbirds. The terrain is flat, being part of the floodplains of the Brahmaputra. During monsoon, the major part of this area is completely inundated.

AVIFAUNA

Although a full checklist has not been made, information on many Threatened species is available. This IBA is particularly noteworthy for the records of Baer's Pochard *Aythya baeri*, which has been listed as Critically

Endangered by BirdLife International (2001). It has been recorded in four *beels* within this site, Misamari, Digholi, Kawoimari, and Laujan (Choudhury 2000). Although the high number of ducks may not be correct owing to confusion with Ferruginous Duck *Aythya nyroca* from a distance, the fact remains that a few Baer's Pochard winter every year. A few thousand waterfowl, including ducks and geese, winter in the area. Seven more threatened species were recorded in the area since the last reports in 2004.

Jhanjimukh-Kokilamukh is famous for huge flocks of Bar-headed Goose *Anser indicus*. Sometimes they occur in hundreds, along with Greylag Goose *Anser anser*. Spot-billed Pelican *Pelecanus philippensis* is also frequently seen, particularly when the waterspread is large. They roost on the tall Semul trees along the edge of the *beels*.



ASAD R. RAHMAN

Sometimes Bar-headed Geese *Anser indicus* (above) occur in hundreds along with Greylag Geese *Anser anser* in this IBA

CRITICALLY ENDANGERED

Baer's Pochard	<i>Aythya baeri</i>
White-rumped Vulture (old record)	<i>Gyps bengalensis</i>
Slender-billed Vulture (old record)	<i>Gyps tenuirostris</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
Black-bellied Tern	<i>Sterna acuticauda</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin (old record)	<i>Francoelinus gularis</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Eurasian Curlew	<i>Numenius arquata</i>
River Tern	<i>Sterna aurantia</i>

OTHER KEY FAUNA

Gangetic Dolphin *Platanista gangetica* inhabits the rivers, and various turtles are also found.

LAND USE

- Fishing
- Agriculture
- Recreation

THREATS AND CONSERVATION ISSUES

- Aquaculture and fishing
- Encroachment for agriculture
- Poisoning of birds
- Disturbance to birds
- Pesticides

Reclamation of *beels*, excessive fishing, and poaching of birds are the main issues. IBCN has taken up a conservation awareness programme with the help of the local people. Under the CEPF project of RSPB-BNHS from 2008 to 2010, Jhanjimukh-Kokilamukh was one of the main conservation sites.

If properly protected, this wetland complex could attract thousands of waterbirds, fulfilling A4iii criteria.

KEY CONTRIBUTORS

Prashanta Kumar Saikia, Shanta Sharma, Anwaruddin Choudhury, Kulojyoti Lahkar, Ananta Dutta.

REFERENCES

- BirdLife International (2001) *Threatened Birds of Asia: the BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India, NE Regional Office, Guwahati. Pp. 240.
- Wetlands International (2012) *Waterbirds Population Estimates: Fifth Edition*. Wetlands International Global Series No. 12. Wageningen, The Netherlands. (online version)

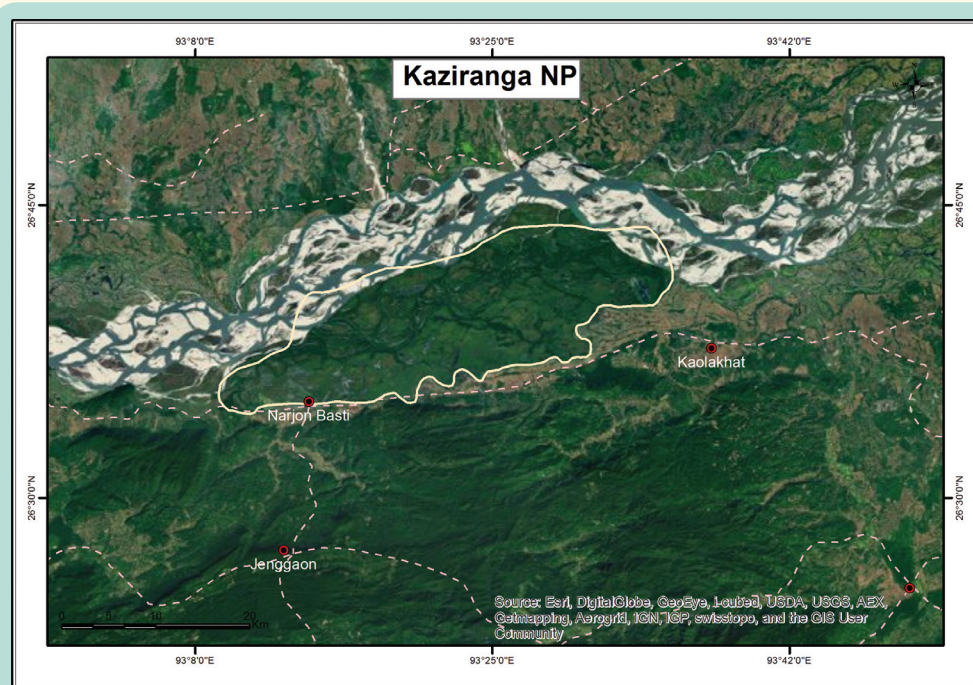
KAZIRANGA NATIONAL PARK

IN-AS-25

IBA Site code	: IN-AS-25	Altitude	: 67–80 msl
Administrati Region (State)	: Assam	Rainfall	: >2,000 mm
Districts	: Nagaon, Golaghat, Sonitpur	Temperature	: 7 °C to 35 °C
Coordinates	: 26° 39' 17" N, 93° 23' 51" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Grassland, Tropical Dry Deciduous Forest, Tropical Semi-evergreen Forest
Area	: 84,980 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains), A4i ($\geq 1\%$ of biogeographic population), A4iii ($\geq 20,000$ waterbirds)

PROTECTION STATUS: National Park, established January, 1974. Tiger Reserve in 2010.



GENERAL DESCRIPTION

Kaziranga National Park is an internationally famed wilderness, mainly known for the Indian One-horned Rhinoceros *Rhinoceros unicornis*. However, Kaziranga has large populations of many other endangered species, notably the Tiger *Panthera tigris*, Wild Buffalo *Bubalus arnee* (= *B. bubalis*, largest population in the world: Choudhury 2010), Asiatic Elephant *Elephas maximus*, Swamp Deer *Rucervus duvaucelii*, and many more. It is equally rich in avian diversity, with more than 500 bird species. Situated in the floodplains of the Brahmaputra river, it covers parts of Nagaon, Golaghat, and Sonitpur districts of central Assam. Panbari and Kukurakata Reserve Forests, small but important areas for many forest bird species, lie just outside the national park, but are included in the IBA. The

Kaziranga authorities administer these reserve forests.

Kaziranga is a world heritage site, a part of the Kaziranga-Karbi Anglong Elephant Reserve, and is a proposed Ramsar Site. The terrain is flat (67–80 msl), with an east to west and south to northwest incline. Being in the floodplain of the Brahmaputra river, the soil is mainly recent alluvium. Floods are an annual phenomenon, and 50–70 per cent of the total landmass gets submerged. The floodwaters generally recede after 7–10 days. Areas along the base of Karbi Anglong (a plateau) are at higher elevation (80 msl), forming natural highlands that do not get flooded. Soil erosion and the shifting course of the Brahmaputra induce constant change in this landscape.

Numerous small rivers and channels flow through the park from east to west, and some which originate from the

Karbi plateau to the south run northwards and ultimately drain into the Brahmaputra. Shallow oxbow lakes, locally known as *beels*, are relicts of older channels. There are at least nine such *beels* inside the park. Some of them have been silted up, producing swamps and marshes. Consequently, there has been an increase in areas of tall grass and a reduction in short grass areas. The habitat of Kaziranga is such that waterbodies and grasslands form a significant part of the park area. Wetlands cover 7%, grasslands 57% (tall grass 52% short grass/marshes 5%), sand 7%, and woodland 29% of the total area of the original Kaziranga NP (Kushwaha & Madhavan Unni 1996, Kushwaha 1997).

There are three main types of vegetation: alluvial inundated grassland, Tropical Wet Evergreen Forest, and Tropical Semi-evergreen Forest. Grasslands predominate in the west, with tall Elephant Grass on the higher and short grasses on the lower areas surrounding the *beels*. *Erianthus ravennae*, *Phragmites karka*, *Arundo donax*, *Imperata cylindrica*, and *Saccharum* sp. are the main grass species. The herbaceous *Alpina allughas* grows abundantly all over the grassland, especially in damp areas. Amidst the grasses are numerous forbs, and scattered trees of *Bombax ceiba*, *Dillenia indica*, *Careya arborea*, and *Emblica officinalis*. Tropical Wet Evergreen Forests near Kanchanjuri, Panbari, and Tamulipathar blocks are

dominated by trees such as *Aphanamixis polystachya*, *Talauma hodgsonii*, *Dillenia indica*, *Garcinia tinctoria*, *Ficus* sp., *Cinnamomum bejolghota*, and *Syzygium* sp. Tropical Semi-evergreen Forests occur near Baguri, Bimali, and Haldibari. *Barringtonia acutangula* grows in the waterlogged areas.

AVIFAUNA

Kaziranga NP harbours more than 478 bird species (Barua & Sharma 1999), which increased to 490 (Choudhury 2003). There are as many as 27 Threatened species, among the highest recorded in an IBA. While it would not be possible to describe the status and distribution of each Threatened species, it is worth mentioning that Kaziranga is one of the outstanding IBAs, especially for birds of tall, wet grasslands of EBA 131 (Assam Plains Endemic Bird Area) and Biome 12 (Indo-Gangetic Plains).

Out of the 500+ bird species, more than 200 are residents; the rest are migrants, including local migrants. A Bar-headed Goose *Anser indicus* tagged in Mongolia was sighted here in 2013.

Notable resident species with significant populations are: Spot-billed Pelican *Pelecanus philippensis*, Lesser Adjutant *Leptoptilos javanicus*, Swamp Francolin *Francolinus gularis*, Bengal Florican *Houbaropsis bengalensis*, Pallas's



ASAD R. RAHMANI

More than 60% of Kaziranga is grassland, harbouring some of the most threatened species of India



ASAD R. RAHMANI

One-horned Rhinoceros is the iconic species of Kaziranga and also of Assam. The Assam Government has developed Rhino Mission 20:20 which aims to increase the population to 3,000

Fish-eagle *Haliaeetus leucoryphus*, Greater Grey-headed Fish-eagle *Ichthyophaga ichthyaetus*, Black-necked Stork *Ephippiorhynchus asiaticus*, Bristled Grassbird *Chaetornis striatus*, Marsh Babbler *Pellorneum palustre*, Black-breasted Parrotbill *Paradoxornis flavirostris*, and Finn's Weaver (Yellow Weaver) *Ploceus megarhynchus*.

Some of the uncommon vultures are the White-rumped *Gyps bengalensis*, Slender-billed *G. tenuirostris*, and Red-headed *Aegypius calvus*. Six Slender-billed and four White-rumped Vulture were seen in January, 2014. A couple of nests of Slender-billed are being observed in Kaziranga NP from 2001 to 2013, but the nests of White-rumped were not seen after 2005. Carcasses from natural death of wild animals ably support flocks of Himalayan Griffon *Gyps himalayensis*.

Other uncommon birds are Black-bellied Tern *Sterna acuticauda*, Pied Falconet *Microhierax melanoleucos*, Greater Adjutant *Leptoptilos dubius*, Jerdon's Bushchat *Saxicola jerdoni*, Swamp Prinia *Prinia cinerascens*, Jerdon's Babbler *Chrysomma altirostre*, and Slender-billed Babbler *Turdoides longirostris*. Some of the species, especially of the tall grasslands and thick shrubs, may not be as rare as thought because finding them is rather difficult, especially on brief birdwatching surveys. The White-bellied Heron *Ardea insignis* is an occasional species.

Possibly, the Vulnerable Pale-capped Pigeon *Columba punicea* breeds in the park; it is considered a summer visitor by Barua & Sharma (1999).

After Manas and Orang, Kaziranga has the largest and most secure population (about 30 adult territorial males) of the Critically Endangered Bengal Florican *Houbaropsis bengalensis* in Assam (Rahmani *et al.* 2014).

Kaziranga is also famous for its nesting colonies of Spot-billed Pelican, and Greater and Lesser Adjutants. Almost all species of tall, wet grasslands of the Brahmaputra floodplains are found here. Thus, Kaziranga is one of the most important bird areas of India.

This fabulous IBA also has 21 Near Threatened species, some of them with significant wintering or breeding populations.

According to the classification by BirdLife International (undated), this IBA lies in Biome 12 (Indo-Gangetic Plains). Of the 13 species listed in this biome, 12 are found in the park. Bird species of at least six other biomes are also seen, generally in winter. For instance, Himalayan Griffon *Gyps himalayensis*, Brown-headed Gull *Larus brunnicephalus*, and Grey-backed Shrike *Lanius tephronotus* of Biome 5 (Eurasian High Montane) occur in Kaziranga in winter. Similarly, Slaty-backed Flycatcher *Ficedula hodgsonii*, Slaty Blue Flycatcher *F. tricolor*, Ferruginous Flycatcher

Muscicapa ferruginea, Himalayan Rubythroat *Luscinia pectoralis*, Chestnut-headed Tesia *Tesia castaneocoronata*, Grey-bellied Tesia *T. cyaniventer*, Grey-sided Bush-warbler *Cettia brunnifrons*, and Chestnut-crowned Bush-warbler *C. major*, all belonging to Biome 7 (Sino-Himalayan Temperate Forests), winter in this site.

Kaziranga is also famous for its large populations of waterbirds, especially Bar-headed Goose *Anser indicus*. In all, more than 20,000 waterbirds are found in the *beels* and riverine tracts in the national park area. Therefore, this site also qualifies for A4iii criteria. Between 2,000–3,000 Bar-headed Geese are found in Kaziranga. According to Wetlands International (2012), the total population of this goose is 52,000 to 60,000, and 1% population threshold is 560. At least 4–5% of the global population of Bar-headed Goose winters at this site, thus qualifying it for A4i criteria also.

OTHER KEY FAUNA

Kaziranga is famous for its large mammals such as Indian One-horned Rhinoceros *Rhinoceros unicornis*, Asiatic Elephant *Elephas maximus*, Wild Buffalo *Bubalus arnee* (= *B. bubalis*), Swamp Deer *Rucervus duvaucelii*, Gaur *Bos gaurus*, Sambar *Rusa unicolor*, and Tiger *Panthera tigris*. Other fauna include 15 species of threatened mammals. In addition to the mammals already mentioned, there are the Slow Loris *Nycticebus bengalensis*, Capped Langur



ASAD R. RAHMANI

Hog badger *Acrotonyx collaris* is probably the commonest badger of the Northeast. This bold and fearless predator is often seen in Kaziranga

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardea insignis</i>
Baer's Pochard	<i>Aythya baeri</i>
Red-headed Vulture	<i>Aegypius calvus</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
Spotted Greenshank	<i>Tringa guttifer</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Yellow-breasted Bunting	<i>Emberiza aureola</i>

VULNERABLE

Dalmatian Pelican	<i>Pelecanus crispus</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Lesser White-fronted Goose	<i>Anser erythropus</i>
Marbled Teal	<i>Marmaronetta angustirostris</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Eastern Imperial-eagle	<i>Aquila heliaca</i>
Swamp Francolin	<i>Francolinus gularis</i>
Indian Skimmer	<i>Rynchops albicollis</i>
Pale-capped Pigeon	<i>Columba punicea</i>
Hodgson's Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Finn's Weaver (Yellow Weaver)	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaeus</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Pallid Harrier	<i>Circus macrourus</i>
White-cheeked Hill-partridge	<i>Arborophila atrogularis</i>
Great Thick-knee	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Black-tailed Godwit	<i>Limosa limosa melanuroides</i>
Eurasian Curlew	<i>Numenius arquata</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Blossom-headed Parakeet	<i>Psittacula roseata</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Swamp Prinia	<i>Prinia cinerascens</i>
Rufous-rumped Grassbird	<i>Graminicola bengalensis</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Marsh Babbler	<i>Pellorneum palustre</i>

Trachypithecus pileatus, Rhesus Macaque *Macaca mulatta*, Hoolock Gibbon *Hoolock hoolock*, Sloth Bear *Melursus ursinus*, Otters *Lutra lutra* and *L. perspicillata*, Gangetic Dolphin *Platanista gangetica*, Barking Deer *Muntiacus muntjak*, and Malayan Giant Squirrel *Ratufa bicolor*.



DHRITIMAN MUKHERJEE

The grasslands of Kaziranga, along with Manas, have almost 50% of the Bengal Florican (above) population of India. In the 1970s and 1980s, Kaziranga used to have huge breeding colonies of Spot-billed Pelican (below) but mysteriously the breeding population has declined, although its overall population in India has increased manifold



ASAD R. RAHMANI



ASAD R. RAHMANI

Besides giving protection to globally Threatened species, Kaziranga also harbours one of the largest wintering populations of Bar-headed Geese *Anser indicus*

LAND USE

- Nature conservation
- Tourism and recreation
- Forestry

THREATS AND CONSERVATION ISSUES

Kaziranga is among the best protected parks in Asia. However, issues such as increased vehicular traffic along the highway (accidental killing of animals is a regular phenomenon), periodic high floods, possible alignment of east-west highway (that will widen the existing highway, virtually doubling it), pollution from tea gardens, threat from accidents in Numaligarh refinery, invasion by *Mimosa* weed, and rhino poaching are matters of great concern. Threat from the proposed railway has been averted for the time being due to protest by the people (Choudhury 1987), but concerned persons should be alert to prevent the revival of this plan. Poaching of the rhino for its horn is the biggest threat and efforts to prevent it take up most of the time of the management. Thanks to effective patrolling, poaching is under control, and rhino numbers in Kaziranga indicate a healthy population.

There is a need to set up a system of long-term monitoring of animals and habitats. At present, all management practices are tuned to the rhino and larger mammals, with no attention given to species such as the Bengal Florican. The impact of annual controlled burning on the habitat of the Bengal Florican and other grassland birds needs to be assessed.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Asad R. Rahmani.

KEY REFERENCES

- Barua, M. and Sharma, P. (1999) Birds of Kaziranga National Park, India. *Forktail* 15: 47–60.
- BirdLife International (undated) *Important Bird Areas (IBAs) in Asia: Project Briefing Book*. BirdLife International, Cambridge, UK. Unpubl.
- Choudhury, A.U. (1987) Railway threat to Kaziranga. *Oryx* 21: 160–163.
- Choudhury, A.U. (2003) *Birds of Kaziranga National Park – A checklist*. Gibbon Books & The Rhino Foundation, Guwahati. 46 pp.
- Choudhury, A.U. (2010) *The vanishing herds: the wild water buffalo*. Gibbon Books & The Rhino Foundation [give full name] with support from COA, Taiwan, Guwahati. 184 pp.
- Kushwaha, S.P.S. (1997) Landmass dynamics and rhino habitat suitability in Kaziranga National Park. Indian Institute of Remote Sensing, Dehradun.
- Kushwaha, S.P.S. and Madhavan Unni, N.V. (1996) Applications of remote sensing techniques in forest cover monitoring and habitat evaluation – a case study at Kaziranga National Park, Assam. In: Kamat, D.S. and Panwar, H.S. (Eds) *Wildlife Habitat Evaluation Using Remote Sensing Techniques*. Indian Institute of Remote Sensing/Wildlife Institute of India, Dehradun. Pp. 238–247.
- Rahmani, A.R., Kalra, M., Shinde, N., and Khonsai, N. (2014) Studying movement pattern and dispersal of the Bengal Florican (*Houbaropsis bengalensis*): a Satellite Telemetry Pilot Project: Annual Progress Report, 2013–2014. Bombay Natural History Society, Mumbai. Pp. 40.
- Wetlands International (2012) *Waterbird Population Estimates: Fifth Edition*. Wetlands International Global Series No. 12. Wageningen, The Netherlands. (Online version downloaded in December, 2014).

KUARBARI DALANI

IN-AS-26

IBA Site Code : IN-AS-26

Administrative Region : Assam
(State)

District : Lakhimpur

Coordinates : 27° 14' 03" N, 94° 18' 40" E

Ownership : State, Private

Area : c. 15 ha

Altitude : 90 msl

Rainfall : >2,000 mm

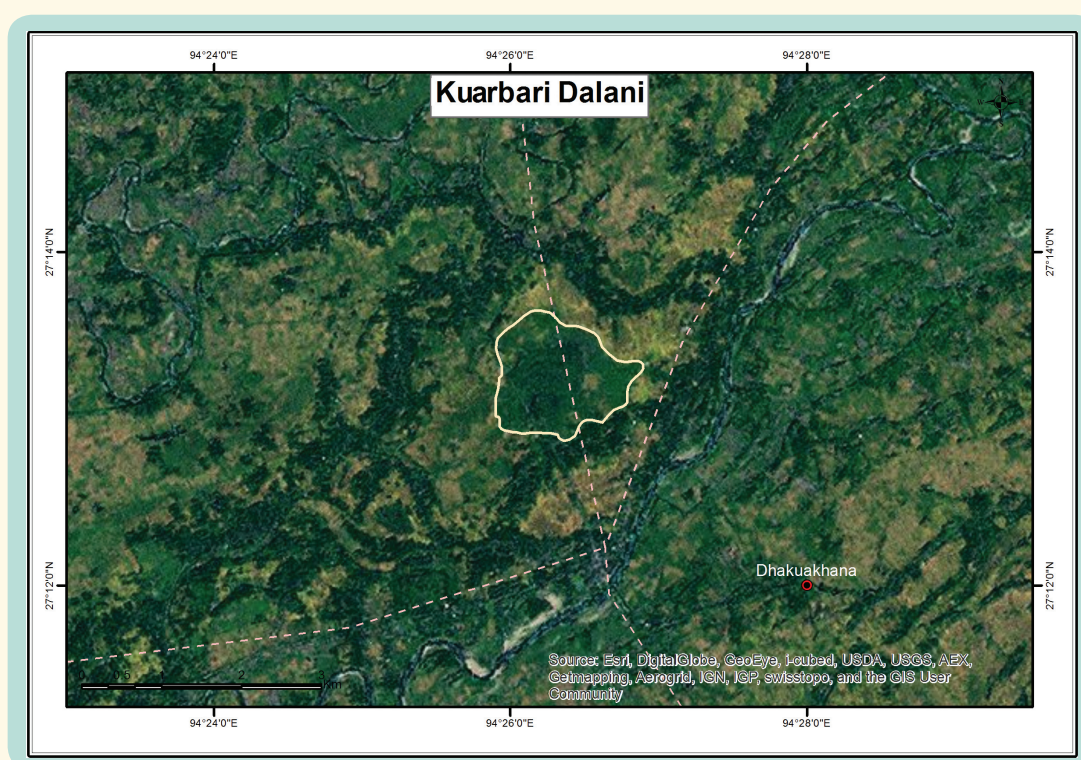
Temperature : 7 °C to 35 °C

Biogeographic Zone : Northeast

Habitats : Seasonal marsh

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Kuarbari or Koabari is a small marshy area near Dhakuakhana township in Lakhimpur district, eastern Assam. Surrounded by villages with cultivation, this site attracts a large number of waterbirds, including Spot-billed Pelican *Pelecanus philippensis*, Greater Adjutant *Leptoptilos dubius*, Lesser Adjutant *L. javanicus*, and Asian Openbill *Anastomus oscitans* (Choudhury 2000). The villagers in the area are highly motivated to protect the area and there is virtually no hunting, although poisoning of birds was regularly practised in the past. Dalani in the local language means swamp, and Dal is a kind of aquatic grass. This wetland IBA has the usual short grasses on the fringe. Bamboos and tall trees are found in the surrounding villages.

However, in recent years, the area underwent drastic change in land use pattern. The major part of the IBA has been silted up, and hardly any marshy area remains by late winter.

AVIFAUNA

No detailed study on this site has been conducted, but due to the protection by the villagers, quite a large number of waterfowl are found here, although the site still does not qualify for A4iii criteria ($\geq 20,000$ waterbirds). This site has been selected purely on the basis of regular and significant numbers of the Endangered Greater Adjutant *Leptoptilos dubius* found here. Critically Endangered White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* used to be found here, but now they have

ASAD R. RAHMANI



Due to ecological changes, the marshy area of this IBA has silted up, resulting in decrease of waterbirds. However Lesser Adjutant *Leptoptilos javanicus* is still seen in good numbers

become extremely rare. Six nests of Slender-billed vultures were reported near Kuarbari Dalani (IBA) in 2014 by Debojit Phukan, Honorary Wildlife Warden. Out of this six nests two were verified by BNHS vulture team (Mayur Bawri pers. comm. 2015)

OTHER KEY FAUNA

As the wetland is surrounded by human habitation, not many wild mammals are found in the site. For the rest, it is Data Deficient.

LAND USE

- Agriculture
- Fishing

THREATS AND CONSERVATION ISSUES

- Agriculture
- Fishing
- Grazing by livestock
- Poisoning of birds
- Siltation

Although the villagers are highly motivated towards conservation, there is always a threat from poachers who poison birds. This can be stopped by extensive conservation education and enforcement of the Wildlife Protection Act.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
---------------------	-------------------------------

However, siltation and cultivation, and not occasional poaching, are going to be the major issues for the survival of this site. A local NGO, the Megamix Nature Club, has been trying to create greater awareness among the villagers. This site could be declared as a Community Conservation Area, under the amended Wildlife (Protection) Act, 2003. Kuarbari Dalani is in grave danger of being a 'lost site' in the near future.

KEY CONTRIBUTORS

Bikul Goswami, Anwaruddin Choudhury and D. Phukan.

KEY REFERENCE

Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.

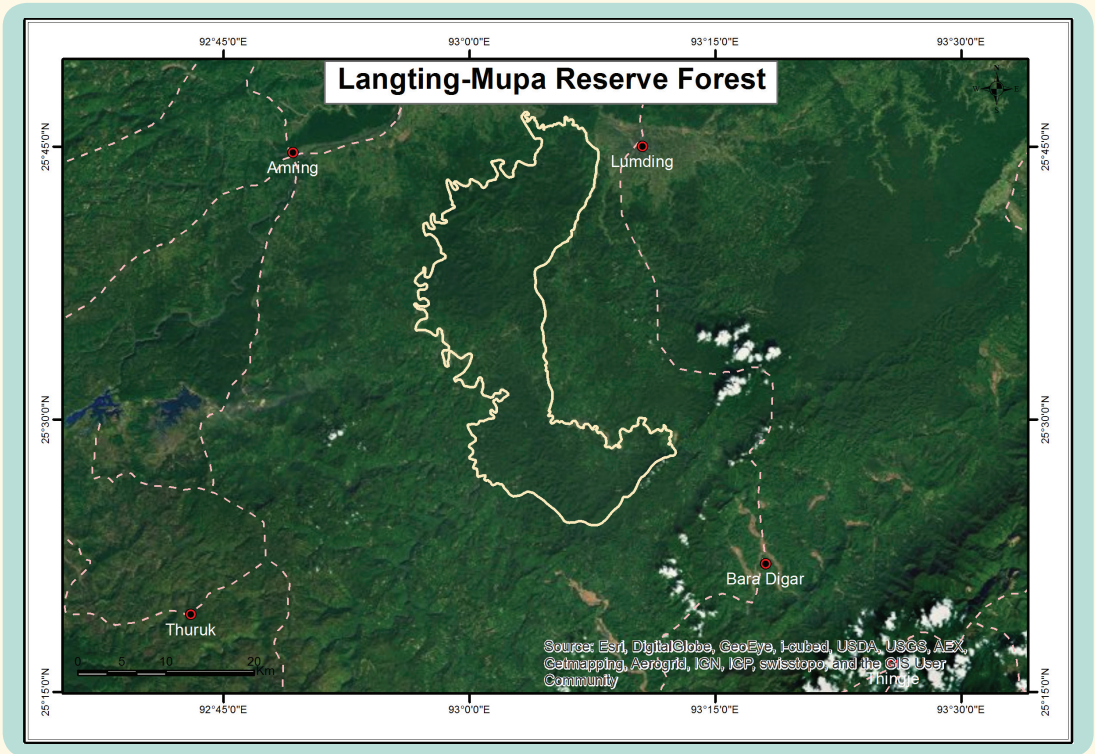
LANGTING-MUPA RESERVE FOREST

IN-AS-27

IBA Site Code	: IN-AS-27	Area	: 49,300 ha
Administrative Region (State)	: Assam	Altitude	: 150–500 msl
District	: North Cachar Hills (Dima Hasao)	Rainfall	: 800–1,500 mm
Coordinates	: 25° 34' 30" N, 93° 08' 30" E	Temperature	: 6 °C to 32 °C
Ownership	: State, Autonomous Council	Biogeographic Zone	: Northeast
		Habitats	: Tropical Moist Deciduous Forest, Tropical Semi-evergreen Forest

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Langting-Mupa is a large forested area in the northern part of North Cachar Hills (Dima Hasao) district in central Assam. The topography of the area varies from undulating plains to low hills, which are part of an Archaean plateau. Judging by topographical and floral criteria, it may be placed in the Eastern Himalaya Endemic Bird Area (EBA 130) (Stattersfield *et al.* 1998). Diyung, Lungding, and Langting are the main rivers that irrigate this IBA. The average elevation of the larger part of this IBA is 150–200 msl. Most of the smaller nullahs become dry during winter, as the area is in a low rainfall zone (rain shadow area).

The forest type is Tropical Moist Deciduous, with Tropical Semi-evergreen along the nullahs. Abandoned *jhums* (slash-

and-burn shifting cultivation) are covered with various grasses.

The site has some linkage with three other IBAs, Dhansiri, Lumding, Marat Longri, and Barail Range. It is also part of the Dhansiri-Lungding Elephant Reserve that was notified in 2003.

AVIFAUNA

Rich and diverse birdlife characterizes this area. More than 180 species have been recorded, while there may be more than 250 altogether (A.U. Choudhury, *pers. comm.* 2003). The globally Threatened Green Peafowl *Pavo muticus*, which used to occur in North Cachar Hills (Ali & Ripley 1987), is now locally extinct. In the North Cachar



ASAD R. RAHMANI

This IBA forms linkage with other three other IBAs Dhansiri, Lumding, Marat Longri and Barail Range

OTHER KEY FAUNA

The region is exceptionally rich in mammals with seven species of primates, including the Hoolock Gibbon *Hoolock hoolock*, possibly three species of bear including the Sun Bear *Helarctos malayanus*, and the Asiatic Elephant *Elephas maximus* and Tiger *Panthera tigris* (A.U. Choudhury, *pers. comm.* 2003). Gaur *Bos gaurus* in this IBA had among the most majestic heads in the country (Stracey 1963). This IBA is also known for its rich turtle fauna (Bhupathy & Choudhury 1992) and a wetland known as Turtle Lake.

Hills, Langting-Mupa RF was the key area for this species. The White-winged Duck *Asarcornis scutulata* has been reported from pools in the northern and southeastern parts of the reserve. There was also a record from Dihangi area, southwest of this IBA (Green 1992).

Four species of hornbills, the Oriental Pied *Anthraceroceros albirostris*, Wreathed *Aceros undulatus*, Great Pied *Buceros bicornis*, and Austen's Brown *Anorrhinus austeni* occur here. The last two species are considered Near Threatened by BirdLife International (2001).

The Vulnerable Rufous-necked Hornbill *Aceros nipalensis* has been recorded sporadically from the southeastern corner, just north of Barail Range (Choudhury 2000). Galliforms such as the Red Junglefowl *Gallus gallus* and Kaleej Pheasant *Lophura leucomelanos* are abundant in Langting-Mupa RF, while the Grey Peacock-pheasant *Polyplectron bicalcaratum* and Mountain Bamboo-partridge *Bambusicola fytchii* are also common. In winter, the abundance of birds increases to a great extent with the arrival of altitudinal migrants. The list is too long to mention here. As the forest is still intact in many areas, birdlife is very rich.

LAND USE

- Forestry
- Agriculture

THREATS AND CONSERVATION ISSUES

- Illegal felling of trees
- Encroachment
- Poaching
- Insurgency

Felling of trees and encroachment are the two major issues in this IBA, apart from poaching. In recent years, insurgency has become common in the area.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- Ali, S. and Ripley, S.D. (1987) *Compact Handbook of the Birds of India and Pakistan*. Oxford University Press, Mumbai.
- Bhupathy, S. and Choudhury, B.C. (1992) Turtle fauna of Assam. Preliminary report. Wildlife Institute of India, Dehradun.
- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, U.K. Pp. 3038.
- Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books and WWF-India NE Region, Guwahati. Pp. 240.
- Green, A. (1992) The status and conservation of the White-winged Wood Duck *Cairina scutulata*. IWRB Spec. Pub. 17, Slimbridge, UK.
- Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. Birdlife International, Cambridge, UK. Pp. 846.
- Stracey, P.D. (1963) *Wildlife in India: its conservation & control*. Ministry of Food and Agriculture, Department of Agriculture, Government of India, New Delhi.

ENDANGERED

White-winged Duck *Asarcornis scutulata*

VULNERABLE

Rufous-necked Hornbill *Aceros nipalensis*

NEAR THREATENED

Great Pied Hornbill *Buceros bicornis*
Austen's Brown Hornbill *Anorrhinus austeni*

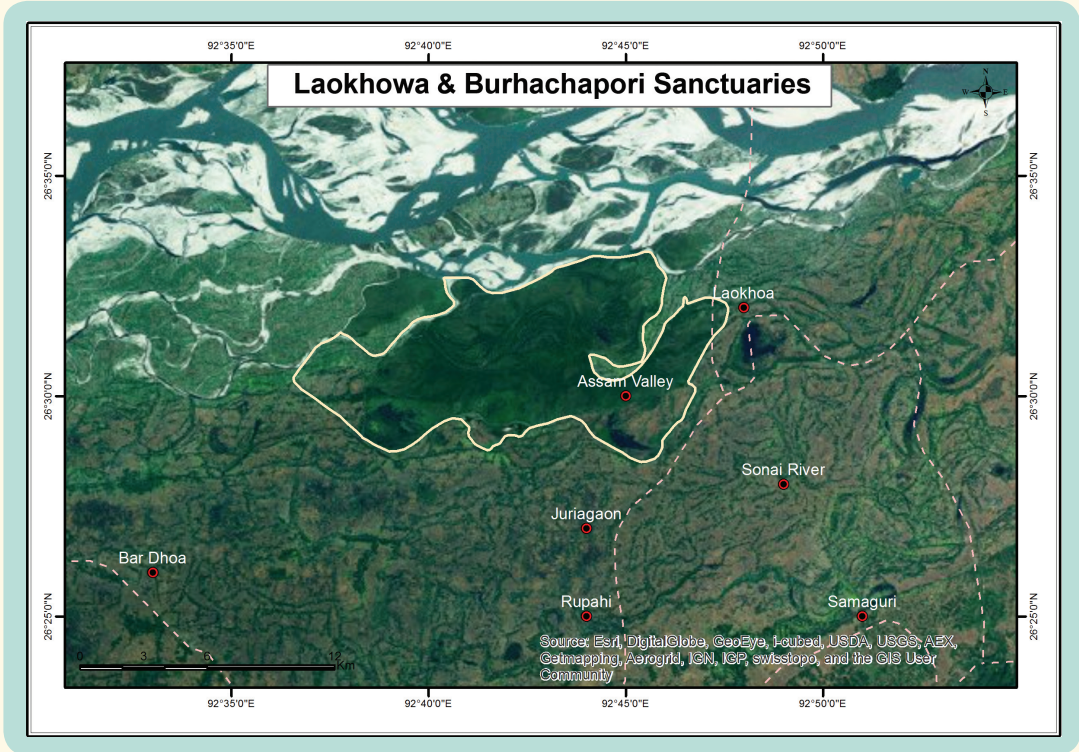
LAOKHOWA & BURHACHAPORI SANCTUARIES

IN-AS-28

IBA Site Code	: IN-AS-28	Altitude	: 55–70 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–2,500 mm
District	: Nagaon, Sonitpur	Temperature	: 7 °C to 35 °C
Coordinates	: 26° 28' 33.2" to 26° 33' 52.5" N, 92° 47' 21" to 92° 35' 29" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland, Freshwater Swamp, Tropical Secondary Scrub
Area	: 11,417 ha		

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS : Wildlife Sanctuaries: Laokhowa, established 1979; Burhachapori, established 1995



GENERAL DESCRIPTION

Laokhowa and Burhachapori Wildlife Sanctuaries (LBWLS) are two important, contiguous protected areas of central Assam, located on the south bank of the Brahmaputra river. Laokhowa WLS (7,011 ha) is located in Nagaon district. It was declared as a “proposed reserve forest” way back in 1905, together with Kaziranga, and a reserve forest in 1907, on the basis of its population of Indian One-horned Rhinoceros *Rhinoceros unicornis*. Burhachapori WLS (4,406 ha) is located north of Laokhowa in Sonitpur district, and was declared as a reserve forest in 1974. Dhaniasuti, an offshoot channel of the Brahmaputra, flowing between Laokhowa and Burhachapori, bifurcates the twin

sanctuaries and forms the administrative boundary between Nagaon and Sonitpur districts.

The sanctuaries are situated on the floodplains of the Brahmaputra river, and during the summer rainfall, the site experiences high levels of inundation, making the sanctuaries virtual islands. The natural vegetation is mainly forest, with tall trees interspersed with grasslands, and wetland vegetation. The habitat of Laokhowa comprises c. 42% grassland, 31% woodland, and 14% waterbodies while the rest is under non-forest land use (illegal encroachment and land allocated to forest villages). On the other hand, 37% of Burhachapori is grassland, 29% woodland, 25% waterbodies (including the Brahmaputra which flows

through the northern boundary of the sanctuary), 4% sand deposits, and the remaining area under non-forest land use (illegal encroachment) (Ojah & Saikia 2014).

The forests are primarily Tropical Moist Deciduous, with patches of Semi-evergreen type. The understorey is found to vary from one forest patch to another, depending upon the character of the dominant trees. In some patches, it is dominated by pteridophytes, and in others by species of *Eupatorium*, *Mikania*, and *Ageratum*. Climbers and herbs like *Hydrocotyle* and *Colocasia* are present. Some epiphytic ferns, namely *Asplenium* and *Pyrosia*, can be seen. The dominant trees include *Albizia procera*, *Acacia catechuoides*, *Bombax ceiba*, and *Barringtonia acutangula*, along with woody shrubs like *Ziziphus jujuba*. Grasses grow in the relatively dry areas (Bhagabati & Lahkar 1998). The dominant grass species include *Imperata cylindrica*, *Saccharum spontaneum*, *Erianthus ravennae*, *Hemarthria compressa*, *Cynodon dactylon*, *Phragmatis karka*, *Chrysopogon aciculatus*, *Arundo donax*, and *Vetiveria zizanioides* (Ojah & Saikia 2014).

Laokhowa and Burhachapori are part of the Kaziranga-Orang PA Landscape. They are connected to Kaziranga and Orang by the Brahmaputra riverine tract. Kaziranga National Park lies just 8 km east of the Laokhowa Burhachapori complex, while Orang NP is situated 11 km west of this complex. Ojah *et al.* (2011) have documented the importance of Laokhowa and Burhachapori as vital components of the wildlife corridor between Kaziranga and Orang. The corridor is an extensive riverine landscape along the Brahmaputra, covering an area of more than 1,500 sq. km. Wildlife such as rhino, elephant, tiger, and wild water buffalo, among others, take shelter in the river islands of the Brahmaputra and use them for dispersal within the Kaziranga-Orang-Laokhowa-Burhachapori landscape. Gangetic River Dolphin, otters, deer, hare, turtles, snakes, and many bird species, including the Critically Endangered Bengal Florican *Houbaropsis bengalensis*, Gyps vultures, and Red-headed Vulture *Aegypius calvus*, are regularly sighted within this corridor (Ahmed *et al.* 2009, Ojah *et al.* 2011).

AVIFAUNA

About 300 bird species have been recorded in the LBWLS complex, of which c. 250 species have been recorded photographically (NWLD 2014). Rahmani *et al.* (1990), during their surveys in the late 1980s, did not find Bengal Florican in Laokhowa and Burhachapori areas due to disturbance at that time. Subsequently, however, Talukdar (1995), Goswami *et al.* (1999), and Choudhury (2002) found that florican sighting had become frequent, due to improvement of the habitat. In 1997, P. Bordoloi (*pers.comm.*) recorded the Bengal Florican in Jhaoni region of Burhachapori. In 1998, an injured male florican was rescued by the Forest Department. Between 2002 and 2007, no florican sightings were recorded in the

sanctuaries. From 2007 onwards, a number of sightings were recorded (Ojah *et al.* 2013). Apart from the two sanctuaries, floricans were sighted in a number of river islands adjacent to Burhachapori WLS within the wildlife corridor, including two sightings of Bengal Florican during the non-breeding period (August) in Majarbali Chapori, the largest river island in the corridor (Ojah *et al.* 2013).

Burhachapori is home to a unique breeding colony of Blue-tailed Bee-eater *Merops philippinus*. Every year, about 3,000 pairs of this bird converge on a 2,000 ha area of the Koroitoli grasslands of Burhachapori to nest and breed. They come to the grasslands by March and start mating. Being cavity nesters, they dig up underground tunnels, where they make nests and lay two to nine eggs. The eggs start to hatch by early to end May, and by late June the birds leave the colony, just before Burhachapori is inundated by the annual monsoonal floods. Large numbers of these nests can be seen together in the colony (Ojah *et al.* 2014).

The aquatic grasses of the Kasodhora wetlands of Burhachapori are breeding and nesting colonies of Black-breasted Weaver *Ploceus benghalensis*, Streaked Weaver *P. manyar*, and Baya Weaver *P. philippinus*. A few nests of Greater Adjutant *Leptoptilos dubius* are found in Laokhowa.

This IBA site is equally important for 32 Threatened species, some with historical records (e.g., White-bellied Heron *Ardea insignis*) and some with declining numbers (*Gyps* vultures). At least 15 Near Threatened species are reported.

OTHER KEY FAUNA

Laokhowa Burhachapori IBA continues to be one of the important habitats of Indian One-horned Rhinoceros, which is globally Endangered. In the early 1980s, the area held more than 70 rhinos. However, due to the unstable political situation of the state during 1983–1984, the period of the Assam Agitation, poachers killed about 40 rhinos within a matter of weeks. The surviving rhinos fled to nearby safer rhino-bearing PAs such as Orang and Kaziranga.

Asiatic Elephant *Elephas maximus* is another key faunal species of the landscape. A significant population of Wild Water Buffalo *Bubalus arnee* (= *bubalis*) is found in the sanctuaries (Choudhury *et al.* 2008), but they suffer from interbreeding with domestic buffalo. Tiger *Panthera tigris*, Leopard *P. pardus*, Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Ganges River Dolphin *Platanista gangetica*, Wild Boar *Sus scrofa*, Binturong *Arctictis binturong*, Chinese Pangolin *Manis pentadactyla*, Slow Loris *Nycticebus bengalensis*, Crestless Porcupine *Hystrix brachyura*, Large Indian Civet *Viverra zibetha*, Indian Grey Mongoose *Herpestes edwardsii*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Fishing Cat *Prionailurus viverrinus*, Common Otter *Lutra lutra*, Clawless Otter



VJAYAKAR

The grasslands of Laokhowa-Burhachapori and adjoining islands are still suitable for Bengal Florican *Houbaropsis bengalensis*.
With better management of grasslands the population of Bengal Florican will increase.
The managers of Burhachapori WLS needs to be congratulated for making Bengal Florican the logo of the sanctuary (below)



SIVA KUMAR

Amblyonyx cinereus, and Golden Jackal *Canis aureus* are some other wild fauna of this IBA (Bhagabati & Lahkar 1998, Choudhury 1998, Ojah *et al.* 2012, Ojah 2014).

LAND USE

- Nature conservation
- Forestry
- Grazing
- Fishing
- Agriculture in forest villages and encroached areas

THREATS AND CONSERVATION ISSUES

- Livestock grazing
- Poaching
- Illegal fishing
- Firewood collection
- Felling of trees
- Thatch grass collection
- Disturbance to birds
- Erosion
- Encroachment
- Siltation of wetlands
- Invasion of grasslands by woodland and exotic vegetation

There are seven *taungiya* villages and one forest village inside Laokhowa WLS. These forest villagers have been granted land rights under the provisions of the Forest Rights Act. The villages are inhabited by about 20,000 people belonging to Bodo and Lalung tribes. Commercial fishing and grass cutting rights have been suspended, but illegal fishing and grazing remain threats to the ecology of the two sanctuaries. Removal of the *khuttis* (cattle stations) from inside Burhachapori has led to significant revival of the grassland ecosystem. Mass participation of fringe dwellers in participatory conservation practices implemented by the Forest Department and promotion of alternative livelihood activities through eco-development committees have brought about a complete change in the ecology of Laokhowa and Burhachapori (Ojah *et al.* 2012).

This site has great potential to become an excellent habitat for the fauna of Brahmaputra floodplain grasslands, much like the famous Kaziranga National Park (IBA). It is an extremely critical component of the Kaziranga-Orang wildlife corridor. The only step required is to follow the Wildlife (Protection) Act, under which these two sanctuaries were declared. All that is needed is to further control the already declining biotic pressures, clear existing encroachments, and bring the adjacent Brahmaputra riverine corridor under the control of the State Forest Department by declaring it as the 1st Addition of Burhachapori WLS.

During the 1990s and early 2000s, the entire region came under massive pressure of biotic interference in the form

CRITICALLY ENDANGERED

White-bellied Heron (old record)	<i>Ardea insignis</i>
Baer's Pochard	<i>Aythya baeri</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Yellow-breasted Bunting	<i>Emberiza aureola</i>

VULNERABLE

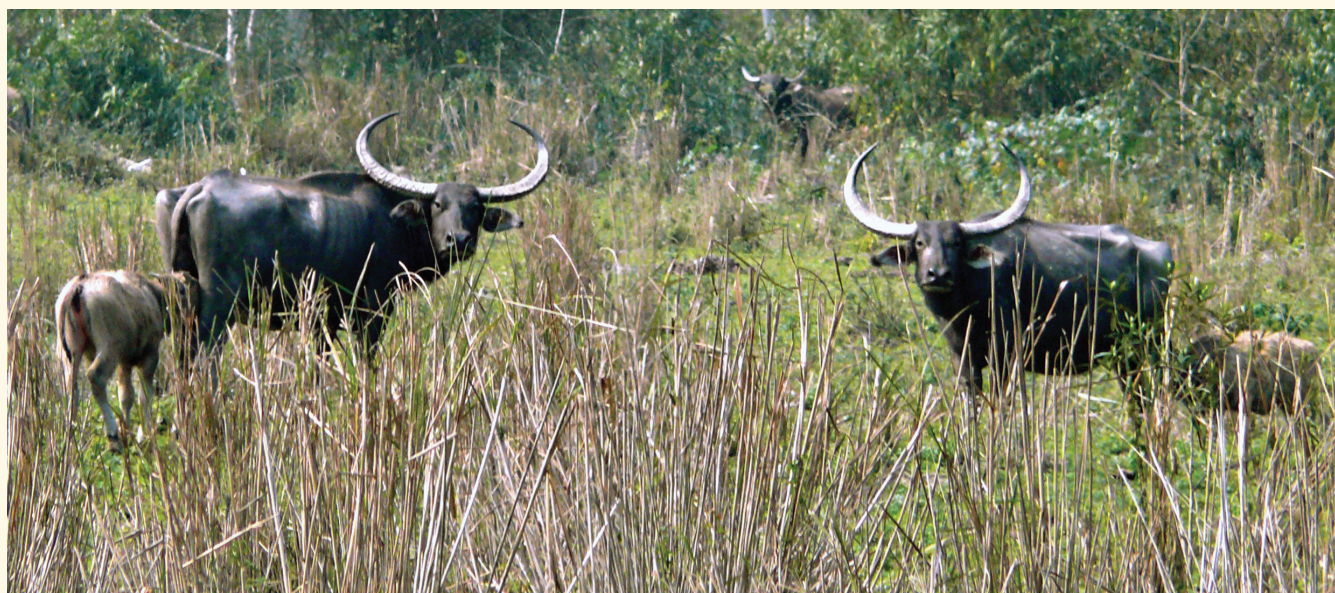
Asian Woollyneck	<i>Ciconia episcopus</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Aquila clanga</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Swamp Francolin	<i>Francolinus gularis</i>
White-throated Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Yellow Weaver (?)	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>
Lesser Fish-eagle	<i>Ichthyophaga humilis</i>
Himalayan Griffon	<i>Gyps himalayensis</i>
Pallid Harrier	<i>Circus macrourus</i>
River Lapwing	<i>Vanellus duvaucelii</i>
River Tern	<i>Sterna aurantia</i>
Ashy-headed Green-pigeon	<i>Treron phayrei</i>
Blossom-headed Parakeet	<i>Psittacula roseata</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

of poaching, encroachment, deforestation, cattle grazing, illegal fishing, lopping, and grass cutting. Excessive grazing by cattle of the *khuttis* inside Burhachapori and from the fringe villages caused large scale degradation of the fragile grassland ecosystem of the two sanctuaries, leading to the disappearance of key grassland-dependent bird species such as the Bengal Florican (Ojah 2014, Ojah & Saikia 2014).

The inclusion of both Laokhowa and Burhachapori as buffer areas of Kaziranga Tiger Reserve (KTR) in 2007, bringing them (and Nagaon Wildlife Division) under the administrative control of the Director, Kaziranga Tiger Reserve, was a turning point for the two sanctuaries. Establishment and strengthening of participatory conservation practices in the two sanctuaries have started to yield positive results. Anthropogenic pressures have reduced considerably and the cattle stations inside Burhachapori have been relocated outside the sanctuary area. The habitats of the sanctuary complex have now revived considerably (Ojah *et al.* 2012).



ASAD R. RAHMANI

A small population of Wild Buffalo is found in this IBA. The authorities of the park are planning to reintroduce One-horned Rhinoceros that was exterminated in 1983

Further improvement in the grassland habitat through implementation of scientific grassland management strategies and control of the existing grazing pressure can transform this IBA into a major habitat for the Critically Endangered Bengal Florican.

Rhinos will be translocated to the LBWLS Complex under the Indian Rhino Vision (IRV) 2020 programme. Altogether, 10 rhinos are scheduled to be translocated from Kaziranga and Pobitora from 2015 till 2017, and the first batch of four rhinos is scheduled for translocation in early 2015. The rhinos will be kept in a *boma* (enclosure).

KEY CONTRIBUTORS

Kulojyoti Lahkar, Anwaruddin Choudhury, Asad R. Rahmani, Goutam Narayan, Shimanta Kr Goswami, Prasanta Kr Bordoloi, P. Sivakumar, Smarajit Ojah.

KEY REFERENCES

- Ahmed M.F., Borah J., and Sarma, P.K. (2009) Assessing the Potential of the Brahmaputra River Islands to support Dispersing Tigers within central Assam, Northeast India. *Technical Report Aaranyak*. TCRI_02/2009. Pp. 45 + folded map.
- Bhagabati, A.K. and Lahkar, K. (1998) Report: Some aspects of biodiversity and its conservation in the river islands of Brahmaputra, Assam. WWF-India NE Region, Guwahati and Assam Science Society, Guwahati.
- Choudhury, A.U. (1998) Survey of grasslands in some parts of Central & Southern Assam: to assess their biodiversity and socio-economic problems. Report to the WWF-India NE Regional Office, Guwahati. 99 pp. + maps.
- Choudhury, A.U. (2002) Current status and conservation of the Bengal Florican *Houbaropsis bengalensis* in northeast India. Pp. 90–94. In: Rahmani, A.R. and Ugra, Gayatri (Eds) *Birds of Wetlands and Grasslands: Proceedings of the Salim Ali Centenary Seminar on Conservation of Avifauna of Wetlands and Grasslands*. Bombay Natural History Society, Mumbai.

- Choudhury, A.U., Bonal, B.S., and Muthukumaravel, C. (2008). Census of wild water buffalo in Laokhowa and Burhachapori Wildlife Sanctuaries. Final report. The Environment & Forest Department and The Rhino Foundation for Nature in NE India, Guwahati, India. 14 pp.
- Goswami, S.K., Medhi, C., and Goswami, B.B. (1999) Rediscovery of Bengal Florican (*Eupodotis bengalensis*) in Laokhowa Wildlife Sanctuary. *Newsletter for Birdwatchers* 39(4): 64–65.
- NWLD-LBCS. (2014) “Photographic Checklist of Birds of Laokhowa Burhachapori Wildlife Sanctuaries”. Assam Forest Department and Laokhowa Burhachapori Wildlife Conservation Society.
- Ojah S. (2014) Bringing Back Rhinos to Laokhowa and Burhachapori. Sishu Bigyan, *District Children’s Science Congress Souvenir*. Pp. 59–63.
- Ojah, S. and Saikia, A. (2014) The Corridor for Conservation: Assessing the Role of the Laokhowa-Burhachapori Wildlife Sanctuaries and the Brahmaputra River Islands of Assam, India as Wildlife Corridor. In: *Seminar Proceedings of 51st Annual Meeting of the Association for Tropical Biology and Conservation*, Cairns, Australia.
- Ojah S., Muthukumaravel, C., and Bordoloi, P. (2011) A Survey of the Ecology of the Islands of the Brahmaputra River adjoining the Burhachapori WLS, Assam. *Laokhowa Burhachapori Bartalusoni*. Pp. 56.
- Ojah S., Saikia, A., and Das, K. (2012) Towards Participatory Management of Protected Areas: Some Observations from the Eco-development Programme of Laokhowa and Burhachapori Wildlife Sanctuaries of Assam. In: Das, P.J., Das, K.C., and Ojah, S. (Eds) *Sustainable Natural Resource Management in Northeast India: Policies and Practices*. Eastern Book House. Pp. 210–229.
- Rahmani, A.R., G. Narayan, L. Rosalind & R. Sankaran (1990). Status of the Bengal Florican in India, pp. 55–78. In: BNHS (ed.). *Status and Ecology of the Lesser and Bengal Floricans with Reports on Jerdon’s Courser and Mountain Quail*. Bombay Natural History Society, India, 155pp.
- Talukdar, B.K. (1995) New record of Bengal Florican in Burhachapori reserved forest, Assam. *Newsletter for Birdwatchers* 35(3): 53.

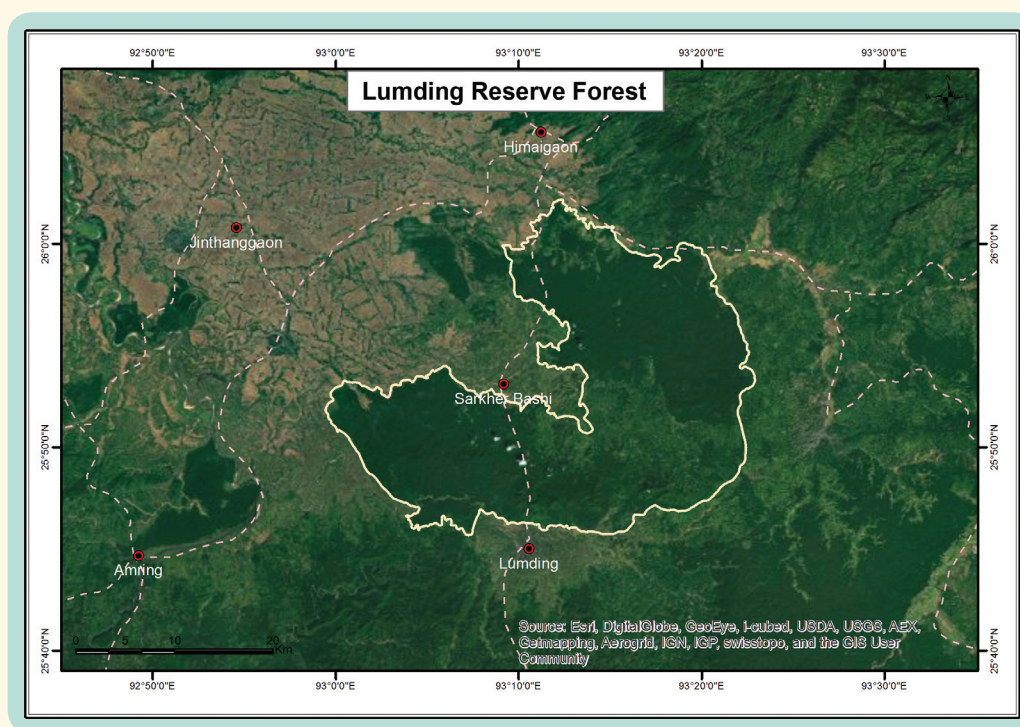
LUMDING RESERVE FOREST

IN-AS-29

IBA Site Code	: IN-AS-29	Area	: 22,300 ha
Administrative Region (State)	: Assam	Altitude	: 100–250 msl
District	: Nagaon	Rainfall	: <800–1,300 mm
Coordinates	: 25° 47' 58" N, 93° 01' 27" E	Temperature	: 7 °C to 35 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Tropical Moist Deciduous Forest, Tropical Semi-evergreen Forest

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Part of Dhansiri-Lumding Elephant Reserve Forest



GENERAL DESCRIPTION

This site includes Lumding Reserve Forest in Nagaon district which is part of central Assam. It is already a part of Dhansiri-Lumding Elephant Reserve that was notified in 2003. The terrain consists of plains and undulating country to low hills, which are part of the Karbi plateau and plains of the Kopili and Diyung rivers. Another important river is the Lumding. While these rivers are perennial, most of the smaller streams that irrigate the IBA become dry during winter. The area has a tropical monsoon type climate: hot and wet in summer, cool and dry in winter. The IBA is in a relatively low rainfall zone (rain-shadow area) of northeast India.

The forest type is Tropical Moist Deciduous and Tropical Semi-evergreen. Abandoned *jhums* (slash-and-burn shifting cultivation of hill tribes) are now covered with various

grasses such as *Themeda villosa*, *Saccharum procerum*, *Imperata cylindrica*, *Eupatorium odoratum*, and shrubs. The Forest Department has plantations mostly of Teak *Tectona grandis*, *Gmelina arborea*, and *Albizia procera*.

AVIFAUNA

About 240 species have been recorded during short visits, but there could be 300 to 350 species (A.U. Choudhury, *pers. comm.* 2003). White-winged Duck *Asarcornis scutulata* has been recorded in Lumding RF. There are past records of this duck from Kaki RF nearby (Nagaon district). Green Peafowl *Pavo muticus* used to frequent the riverbanks, but is not seen anymore. Among the hornbills, Oriental Pied *Anthraceroceros albirostris*, Great Pied *Buceros bicornis*, and Wreathed *Aceros undulatus* are commonly seen. Other birds of interest are White-cheeked Hill-partridge *Arborophila atrogularis*, Grey

Peacock-pheasant *Polyplectron bicalcaratum*, Black-backed Forktail *Enicurus immaculatus*, Himalayan Golden-backed Woodpecker *Dinopium shorii*, Necklaced Laughingthrush *Garrulax moniligerus*, Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, and Sultan Tit *Melanochlora sultanea*. These species represent Biome 9 (Indo-Chinese Tropical Moist Forest).

Many species of other biomes are also seen. Notable among them are Bamboo Partridge *Bambusicola fytchii*, Pied Falconet *Microhierax melanoleucos*, Grey-headed Parakeet *Psittacula finschii*, Asian Emerald Cuckoo *Chrysococcyx maculatus*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus trailii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckooshrike *Coracina melaschistos*, White-throated Bulbul *Alophoixus flaveolus*, Grey-winged Blackbird *Turdus bouboul*, and Redheaded Babbler *Stachyris ruficeps*.

The two Critically Endangered vultures, White-rumped *Gyps bengalensis* and Slender-billed *G. tenuirostris*, are occasionally seen in the area. Neither of them has a significant population in this IBA. The Vulnerable Lesser Adjutant *Leptoptilos javanicus* is occasionally seen, in non-significant numbers. Among globally Threatened species, none of them are found here in good numbers, but the site is vast (23,000 ha) with fairly good forest cover that is likely to remain intact under the Dhansiri-Lumding Elephant Reserve. We propose this as an IBA and suggest detailed ornithological studies to find out the exact status of Threatened and restricted-range species.

OTHER KEY FAUNA

Like all other forest areas of the Northeast, Lumding is also rich in animal life. Choudhury (1996) has reported seven species of primates: Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis*, Stump-tailed Macaque *M. arctoides*, and Slow Loris *Nycticebus bengalensis*.

This IBA site is an important habitat of the Asiatic Elephant *Elephas maximus*, and the area is notified as an Elephant Reserve under Project Elephant. It also harbours two large cats, Tiger *Panthera tigris* and Leopard *P. pardus*, one medium-sized cat Clouded Leopard *Neofelis nebulosa*, and two small cats, Leopard Cat *Prionailurus bengalensis* and Jungle Cat *Felis chaus*, apart from Wild Dog *Cuon alpinus* and Asiatic Black Bear *Ursus thibetanus*. Herbivores include Gaur *Bos gaurus*, Red Serow *Capricornis rubidus*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, and Malayan Giant Squirrel *Ratufa bicolor*. In the dense parts of the forest, Binturong *Arctictis binturong* is found, but due to its nocturnal nature, it is rarely seen. Not much is known about the reptilian and amphibian fauna of this site.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
Green Peafowl (extirpated)	<i>Pavo muticus</i>

VULNERABLE

Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
------------------------------	------------------------------

NEAR THREATENED

River Lapwing	<i>Vanellus duvaucelii</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>

LAND USE

- Forestry

THREATS AND CONSERVATION ISSUES

- Encroachment
- Poaching
- Illegal felling of trees
- Insurgency
- Expressway

Encroachment in the forest was negligible till the mid 1980s. Subsequently, it happens in parts, but large tracts are still free from human disturbance. Although poaching is not a major threat as yet, deer, primates, porcupines, large birds, and monitor lizards are sometimes killed for food by the local people.

Illegal felling of trees and insurgency are two major social and conservation issues, needing urgent attention if this area is to be saved. One of the ways to tackle these problems is regulated and culturally sensitive ecotourism. This IBA has great tourism potential because of its easy accessibility. Lumding is an important railhead of the North East Frontier Railway. Therefore, logistically, this site is well connected. An expressway passes through the reserve forest along the old Nagaon-Lumding 4-Lane road. However, this is also a major conservation concern as it passes right through Lumding RF. Elephant and Gaur are going to be the worst affected species (Choudhury 2004). It is recommended that there be strict regulation on the speed of traffic.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- Choudhury, A.U. (1996) Survey of primates in some parts of eastern and central Assam. Final Report to ASTEC, Guwahati. 32 pp. + maps.
- Choudhury, A.U. (2004) Road to elephantine disaster. *The Telegraph* 24 September, Calcutta.

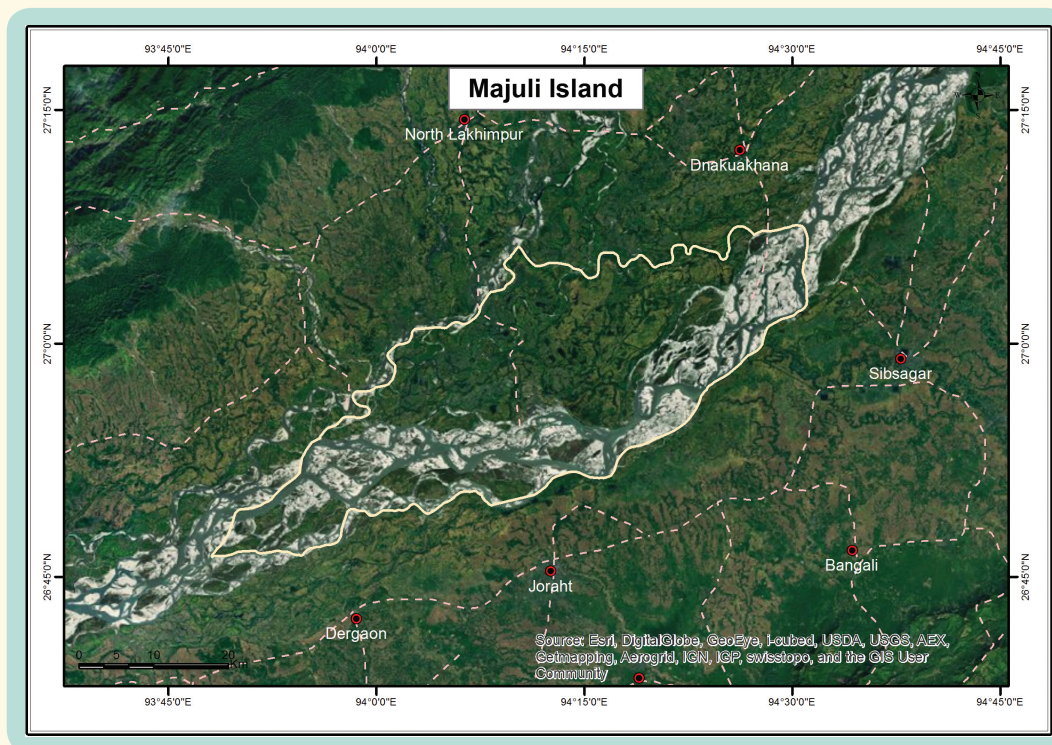
MAJULI ISLAND

IN-AS-30

IBA Site Code	: IN-AS-30	Altitude	: 85 msl
Administrative Region	: Assam	Rainfall	: >2,000 mm
(State)		Temperature	: 6 °C to 35 °C
District	: Jorhat	Biogeographic Zone	: Northeast
Coordinates	: 26° 53' 39" N, 94° 00' 51" E	Habitats	: Riverine Vegetation, Sub-tropical Secondary Scrub, Tropical Grassland, Freshwater Swamp
Ownership	: State, Private		
Area	: 88,000 ha		

IBA CRITERIA : A1 (Threatened species), A4iii (≥20,000 waterbirds)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Majuli Island in the Brahmaputra river is located c. 15 km from the district headquarters at Jorhat in eastern Assam. It is perhaps the second largest river island in the world, and comprises a large riverine island with innumerable small islets, locally called *chaporis*. Originally, the island was part of the Jorhat plain, south of the Brahmaputra river, but southward diversion of the main channel of the river c. 300 years ago resulted in the formation of this island. The northern channel is now known as the Kherkatia-Luit. The topography of the area is flat floodplain with lakes (*beels*) and marshes, and man-made structures such as embankments and roads. Tuni river flows through the middle of the site for

some distance. The main island is surrounded by more than twenty *chaurs* (sandbars) (Bhagabati & Lahkar 1998).

Majuli, with its fertile floodplains and highly productive wetlands, has ideal habitats for a variety of birds. It not only supports diverse resident birds, but also attracts a large number of migratory birds, including some uncommon species. The influence of Vaishnavite culture on the island, which restricts killing animals for meat, has resulted in great tolerance for wildlife and respect for the environment, not seen in other parts of the Brahmaputra Valley. Majuli continues to be a good example of the symbiotic relation between nature and culture, which traditionally provides a congenial environment for the protection of all life forms

(Bhagabati & Lahkar 1998).

High rainfall, high moisture content in the soil, and the flat plains topography favour the growth of evergreen and deciduous trees, grasses, a wide variety of marsh vegetation, bamboo, and cane (Bhagabati & Lahkar 1998).

AVIFAUNA

More than 260 species of birds have been recorded (Choudhury 2013). These include historic records of many Threatened species. Black-breasted Parrotbill *Paradoxornis nipalensis*, Marsh Babbler *Pellorneum palustre* and Jerdon's Babbler *Chrysomma altirostre* were recorded at Kamalabari (Stevens 1914–15), but there is no recent record. Extensive survey is required of all the river islands or *chaporis* that still have tall grass.

In winter, the Spot-billed Pelican *Pelecanus philippensis* can be observed in small numbers in all major *beels*, especially Chakuli, Bhareki, Duboritoli, and Saru-Kakarikata. Lesser Adjutant *Leptoptilos javanicus* is a common breeding bird here, and nests are sometimes found in tall trees close to human settlements. Greater Adjutant *L. dubius* is rare, or seen occasionally. No nest has been found in recent years. A nest of Pallas's Fish-eagle *Haliaeetus leucorhynchus* was found on a *Ficus* tree, near Duboritoli Beel (Bhagabati & Lahkar 1998).

Majuli is famous for its waterfowl, both resident and migrant. The Lesser Whistling-duck *Dendrocygna javanica* sometimes gathers in hundreds on large *beels*, along with other waterfowl. Northern Pintail *Anas acuta*, Northern Shoveller *A. clypeata*, Gadwall *A. strepera*, and Garganey *Querquedula querquedula* are abundant. Three Falcated Teal *Anas falcata* were found in Bhareki Beel, together with other ducks (Bhagabati & Lahkar 1998). On the river banks, the Brahminy or Ruddy Shelduck *Tadorna ferruginea* is common in winter, along with Bar-headed Goose *Anser indicus* and Greylag Goose *A. anser*.

Swamp Francolin *Francolinus gularis* is found in the grassland, but in very small numbers, mainly due to restriction of its habitat. Jogi Pathar area of Majuli has small patches of good quality grassland where Marsh Babbler *Pellorneum palustre* and Swamp Francolin *Francolinus gularis* were recorded (Phukan *et al.* 2013).

Bengal Florican *Houbaropsis bengalensis* was also reported occasionally, but there does not appear to be a viable population in Majuli. Being closer to the northern bank of Brahmaputra, Majuli must have had Bengal Florican habitats before cultivation took over (Rahmani *et al.* 1990). This florican is still present on similar but uninhabited islands near Kaziranga, only c. 40 km downstream. The Bishwanath plain on the northwestern side of Majuli was once a good florican area. Choudhury (2002) mentions that florican is sighted sporadically in scattered grasslands, mostly in the *chaporis* of Brahmaputra river. Therefore, it

is likely that this bird is also found in Majuli and adjoining areas.

The Common Crane *Grus grus* regularly visits Majuli in small numbers (5–10 birds), especially in an area called Bhakat Chapori near Auniati-Alimurgaon. This *chapori* is rich in grasses and sedges.

Due to cultural tolerance of birds and other wildlife by the majority of the inhabitants of Majuli Island, the birds are unmolested. It is not uncommon to see a flock of duck swimming or roosting 10–15 m from a house. Though the whole island is inhabited, long-term viability of many resident birds is assured.

Choudhary *et al.* (2005) conducted a survey in 2004–2005 to locate nesting sites of *Gyps* vultures in Assam. During the survey, they recorded 18 nests of White-rumped Vulture *Gyps bengalensis* in Majuli Island. We do not know how many are present after 10 years.

Christo *et al.* (2012) recorded 69 bird species during their two-day survey in Majuli Island. Their list included the Critically Endangered Baer's Pochard *Aythya baeri*, and nesting colonies of the Vulnerable Lesser Adjutant *Leptoptilos javanicus*. They spotted a flock of Small Pratincole *Glareola lactea*, young ones of Fulvous Whistling-duck *Dendrocygna bicolor*, and Bronze-winged Jacana *Metopidius indicus*. Sand Martin *Riparia riparia* were spotted in their nesting holes on riverbanks. Nesting colonies of Asian Openbill *Anastomus oscitans* were also recorded during their survey.

Although no systematic census of waterfowl has been conducted, it is likely that the total population of waterfowl in all the *beels* of Majuli and the adjoining Brahmaputra river could be much above 20,000, thus qualifying the site for IBA criteria A4iii.

OTHER KEY FAUNA

Majuli Island is thickly populated, so there is not much natural forest left. Till the first half of the 20th century, Tiger *Panthera tigris* was frequently sighted in different parts of Majuli, but presently, it is only occasionally seen (Bhagabati & Lahkar 1998). A small population of the Wild Water Buffalo *Bubalus arnee* (= *bubalis*) is found in Banaria Chapori. Barking Deer *Muntiacus muntjak* was common, but is now extremely rare due to hunting. There is a migratory population of Asiatic Elephant *Elephas maximus*. Hog Deer *Axis porcinus* is another species sometimes seen in the wet grassland areas. In the rivers, Gangetic River Dolphin *Platanista gangetica* is not uncommon. Numerous *beels*, streams, and rivers provide ideal habitats for turtles and amphibians. Saikia & Ahmed (2012) identified a total of 15 species of fish which are used by local communities for medicinal purposes. These include *Channa punctata*, *C. gachua*, *Clarius batrachus*, and *Rasbora daniconius*. Mising, Nepali, Deori, Kachari, and Koch communities residing near the waterbodies use extracts of these fishes

for asthma, piles, stomachache, fever, and in anaemia to increase haemoglobin level.

LAND USE

- Agriculture
- Fishing
- Nature conservation
- Human habitation
- Tourism

THREATS AND CONSERVATION ISSUES

- High human population
- Agricultural intensification and expansion
- Growth of man-made structures
- Fishing
- Brick kilns
- Siltation
- Flooding and erosion

Despite high human habitation, birdlife is relatively safe due to the sensitivity and tolerance of local people. There is already an active group of people, led by Tilak Sarmah, disseminating environmental education among the local people. Since Majuli is not a notified protected area but an inhabited riverine tract with cultivation, wetlands, light woodlands, and growing towns, there is always a threat from man-made factors such as habitat alteration and cutting of nesting trees. However, continuous awareness and motivation will help conserve the avifauna, which is already getting protection to a great extent.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Tilak Ch. Sarmah, Kulojyoti Lahkar, Abani Kumar Bhagabati.

KEY REFERENCES

- Bhagabati, A.K. and Lahkar, K. (1998) Report: Some Aspects of Biodiversity and its Conservation in the River Islands of Brahmaputra, Assam. WWF-India NE Region and Assam Science Society, Guwahati.
- Choudhury, A.U. (2002) Current status and conservation of the Bengal Florican *Houbaropsis bengalensis* in northeast India. Pp. 90–94. In: Rahmani, A.R. and Ugra, Gayatri (Eds) *Birds*

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Bengal Florican (?)	<i>Houbaropsis bengalensis</i>
Baer's Pochard	<i>Aythya baeri</i>
ENDANGERED	
Greater Adjutant	<i>Leptoptilos dubius</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
VULNERABLE	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle (old record)	<i>Haliaeetus leucorhynchus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Black-breasted Parrotbill (old record)	<i>Paradoxornis flavirostris</i>
NEAR THREATENED	
Oriental Darter	<i>Anhinga melanogaster</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Eurasian Curlew	<i>Numenius arquata</i>
River Tern	<i>Sterna aurantia</i>

of Wetlands and Grasslands: Proceedings of the Sálim Ali Centenary Seminar on Conservation of Avifauna of Wetlands and Grasslands. Bombay Natural History Society, Mumbai.

Choudhury, A.U. (2013) Bird Life in Majuli Island. Pp. 49–62. In: Tamuly, D.N. (Ed.), *The Blessed Island*. Programme Production Centre (NE), Doordarshan, Guwahati, India.

Choudhury, A., Lahkar, K., and Risebrough, R. (2005) New nesting sites of Gyps vultures in Assam. *Mistnet* 6(4): 10–11.

Christo, J., Albert, S., Moser, P., and Kharkongor, G. (2012) A two-day survey of birds on Majuli Island in Assam. *Mistnet* 13(4): 6–8.

Phukan, M., Philip, A., and O'Connell, P. (2013) Grassland birds of the Brahmaputra Valley of Assam. *Mistnet* 14(4): 4–8.

Rahmani, A.R., Narayan, G., Rosalind, L., and Sankaran, R. (1990) Status of the Bengal Florican in India. In: Status and Ecology of the Lesser and Bengal Floricans. Final Report. Bombay Natural History Society, Bombay. Pp. 155.

Saikia, K. and Ahmed, R. (2012) Wetland fish biodiversity of Majuli river island (India) and their medicinal values. *The Clarion* 1(2): 81–86.

Stevens, H. (1914–15) Birds of Upper Assam. *JBNHS* 23: 234–268, 547–570, 721–736.

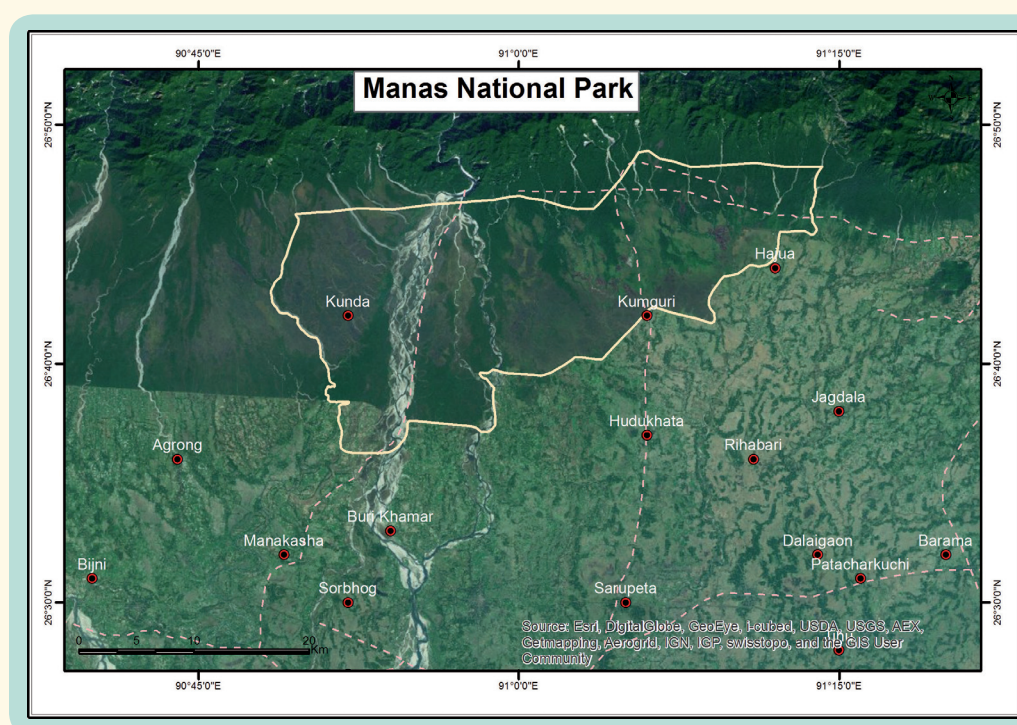
MANAS NATIONAL PARK

IN-AS-31

IBA Site Code	: IN-AS-31	Rainfall	: 2,000–3,000 mm
Administrative Region (State)	: Assam	Temperature	: 7 °C to 35 °C
Districts	: Baksa, Chirang	Biogeographic Zone	: Northeast
Coordinates	: 26° 43' 01" N, 90° 55' 39" E	Habitats	: Tropical Moist Deciduous Forest,
Ownership	: State		Tropical Semi-evergreen Forest,
Area	: 50,000 ha		Tropical Grassland,
Altitude	: 100–300 msl		Riverine Vegetation

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS: National Park, established September, 1990. Earlier called North Kamrup Wildlife Sanctuary



GENERAL DESCRIPTION

Manas National Park, a world heritage site, is located in the Baksa and Chirang districts of Bodoland Territorial Council in western Assam, on the international border with Bhutan. The most well-known of the wildlife reserves of northeast India, second only to Kaziranga, it was earlier called the North Kamrup Wildlife Sanctuary. River Manas with its distributaries, the Beki and Hakua, flows through the park. Other smaller streams include Jongrong, Gyati, and Garuchara. Known for its scenic beauty, Manas is home to a number of globally Threatened birds and mammals. The national park now has the only viable population of the Critically Endangered Pygmy Hog *Porcula salvania*. An added advantage for Manas is the presence of the 102,100 ha Royal Manas National Park across the border in Bhutan. For many species, it is a large, contiguous wilderness area.

The terrain in Manas is mostly flat, gently sloping plains typical of the *bhabar* and *terai* areas of northern India. Towards the north, small hilly promontories of the Bhutan Himalaya can be seen. Approximately half of Manas is savanna grassland, while the rest is Moist Deciduous and Semi-evergreen Forest. There are no large *beels* (waterbodies), but small *beels* and pools occur in the southern areas.

The three main types of vegetation are: i. Tropical Semi-evergreen Forest in the northern part of sanctuary, ii. Tropical Moist Deciduous Forest (the most common type), and iii. extensive alluvial grasslands in the western part of the park, comprising many grass species, and a variety of tree and shrub species, e.g., *Dillenia pentagyna*, *Phyllanthus emblica*, *Bombax ceiba*, and species of *Clerodendrum*, *Leea*, *Grewia*, *Premna*, and *Mussaenda*. There is also a

DHRITIMAN MUKHERJEE



Civil unrest in the early 1990s resulted in large-scale poaching of wild animals in Manas, but now the condition has improved so much that the authorities have reintroduced One-horned Rhinoceros and taken measures for protection of other wildlife

DHRITIMAN MUKHERJEE



Manas Tiger Reserve is perhaps the most important Bengal Florican *Houbaropsis bengalensis* area in India, with a population estimate of 52 to 80 adult individuals

considerable variety of aquatic flora along riverbanks and in the numerous pools (Jain & Sastry 1983). Dry Deciduous forests represent early stages in succession and are replaced by Moist Deciduous forests away from watercourses, which, in turn, are succeeded by Tropical Semi-evergreen climax forest. Grasslands cover about 50% of the park. Some 393 species of dicotyledons, including 197 trees, and 98 species of monocotyledons have been identified.

AVIFAUNA

Around 310 bird species were reported from this IBA (Narayan *et al.* 1989, Ali *et al.* 1985), but the list jumped to 476 species in 2006 (Choudhury 2006a). Now the total is more than 500 (Choudhury 2011b). Altogether 118 bird species of Manas are considered to be dependent on pure grassland or “quasi grasslands” throughout the year, or during a certain period of time. Out of 118 species of birds, 33 species could be identified as obligate grassland birds (Lahkar 2008).

Several uncommon species, including the Greater Adjutant *Leptoptilos dubius*, Lesser Adjutant *Leptoptilos javanicus*, and Spot-billed Pelican *Pelecanus philippensis* can be seen here.

Manas has, perhaps, the largest known population of the Bengal Florican *Houbaropsis bengalensis*. Narayan (1992) estimated c. 80 birds in 1989–1990. Lahkar (2008) estimated c. 45 birds in 2003. Brahma (2015) found 32 adult territorial males during a survey in 2012. Similarly, Ghosh *et al.* (2014) also found 32 adult males in a survey in 2014.

The Manipur Bush-quail *Perdica manipurens* was rediscovered in the park in 2006 (Choudhury 2006b); White-winged Duck *Asarcornis scutulata* has also been recorded (Choudhury 2006c).

Manas NP is an important refuge for most of the tall-wet-grassland species, such as Swamp Francolin *Francolinus gularis*, Marsh Babbler *Pellorneum palustre*, Slender-billed Babbler *Turdoides longirostris*, Jerdon's Babbler *Chrysomma altiloqure*, Bristled Grassbird *Chaetornis striatus*, Black-breasted Parrotbill *Paradoxornis flavirostris* (Choudhury 2011a), and many others. Hodgson's Bushchat *Saxicola insignis*, another tall-grassland species, is present in Manas during winter. Manas is one of the few places where the Vulnerable Yellow Weaver *Ploceus megarhynchus* is found nesting.

According to the biome classification of BirdLife International (undated), Manas mainly lies in Biome 12 (Indo-Gangetic Plains) where 13 species are considered typical of this biome. Except for Collared Myna *Acridotheres albocinctus*, which is restricted to Manipur and a small portion of adjoining Assam, the remaining 12 species are found in Manas. Presence of such a high percentage of biome-restricted birds proves that the habitat is still intact and in pristine condition.

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardea insignis</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
White-winged Duck	<i>Asarcornis scutulata</i>
Manipur Bush-quail	<i>Perdica manipurens</i>
Black-bellied Tern	<i>Sterna acuticauda</i>
Yellow-breasted Bunting	<i>Emberiza aureola</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Wood Snipe	<i>Gallinago nemoricola</i>
Dark-rumped Swift	<i>Apus acuticauda</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Hodgson's Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altiloqure</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Grey-crowned Prinia	<i>Prinia cinereocapilla</i>
Bristled Grassbird	<i>Chaetornis striatus</i>
Yellow Weaver	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Painted Stork	<i>Mycteria leucocephala</i>
Lesser Fish-eagle	<i>Ichthyophaga humilis</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Pallid Harrier	<i>Circus macrourus</i>
Great Thick-knee	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Eurasian Curlew	<i>Numenius arquata</i>
Black-tailed Godwit	<i>Limosa limosa melanuroides</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Manipur Bush-quail	<i>Perdica manipurens</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>

Based on the excellent birdlife and significant populations of some globally Threatened species, Manas Tiger Reserve is considered as one of the Outstanding IBAs of India (BirdLife International 2003). Manas NP has six national and international designations [(i.e. World Heritage Site, National Park, Tiger Reserve (core), Biosphere Reserve (national), Elephant Reserve (core), and Important Bird Area)] and has the highest legal protection and strong legislative framework under the provisions of the Indian



DHIRTIMAN MUKHERJEE

Manas has a small population of Swamp Deer which can increase with better grassland management

Wildlife (Protection) Act, 1972 and Indian Forest Act, 1927/Assam Forest Regulation 1891. It also benefits from government support at both national and regional levels, as well as involvement of national and international conservation organizations.

OTHER KEY FAUNA

Manas harbours some of the richest mammalian diversity in India. More than 60 mammals have been identified, including 22 listed in the Wildlife (Protection) Act, 1972 (Rahmani *et al.* 1991). Only the most endangered are mentioned here. This park is the only known site for the Critically Endangered Pygmy Hog *Porcula salvania*. Successful Pygmy Hog Conservation Breeding Programme under the leadership of Gautam Narayan, and active cooperation of Assam Forest Department has resulted in better protection of the species in Manas, and introduction in Orang NP (an IBA) and Sonai Rupai WLS (an IBA). Hispid Hare *Caprolagus hispidus* is another Endangered species doing well in Manas. Its pellets indicate its presence in all suitable grasslands. A major population of Wild Water Buffalo *Bubalus arnee* (= *bubalis*) is found in Manas (Choudhury 2010). To the west of Manas river, in Bhutan, Golden Langur *Trachypithecus geei* is found.

Manas is also known for its large herds of Asiatic Elephant *Elephas maximus* and Hog Deer *Axis porcinus*. Before the devastation brought about by insurgency, it was not uncommon to see congregations of up to 200 Hog Deer. In deeper jungle, Clouded Leopard *Neofelis nebulosa* is found, but difficult to see due to its nocturnal habit and shy nature. There is a small population of Swamp Deer *Rucervus duvaucelii*. Earlier, their habitat was shared by the Indian Rhinoceros *Rhinoceros unicornis*, but sadly, poachers killed most of these animals. Now there is a reintroduced population. Tiger *Panthera tigris* is still present, although in smaller numbers.

Reptiles are among the lesser-known animals of Manas. In addition to the Yellow Monitor Lizard *Varanus flavescens* and the King Cobra *Ophiophagus hannah*, both Endangered, Manas harbours a variety of turtles and terrapins. The Assam Roofed Turtle *Pangshura sylhetensis* was recently found (Sharma 1988), which is a range extension for this extremely rare species. Other rare turtles are the Eastern Hill Terrapin *Melanochelys tricarinata* and the Indian Sawback or Roofed Terrapin *Kachuga tecta*.

Manas National Park is less studied than other potential butterfly sites of Assam. Nevertheless, 165 species have been recorded till 2014 (Monsoon J. Gogoi, Kushal Choudhury &

Bipul Das, *pers. comm.* 2014), but more than 230 species are expected. Among the Swallowtails, Yellow Gorgon *Meandrusa payeni* occurs. Among the Pierids, Bath White *Pantoporia dapladace* was recorded. The Nymphalids Scarce Tawny Rajah *Charaxes aristogiton*, Dark Evening Brown *Melanitis phedima*, and Whiteline Bushbrown *Mycalesis malsara* were recorded. Whiteline Bushbrown is restricted to Manas Biosphere Reserve in Assam. Blues like Indian Cupid *Everes lacturnus*, Pallid Royal *Tajuria albiplaga*, and Frosted Oakblue *Arhopala dispar* were recorded. Skippers included Spotted Angle *Caprona agama*, Atkinson's Bob *Arnetta atkinsoni*, Similar Awlking *Choaspes xanthopogon* and Mussoorie Bush Bob *Pedesta masuriensis* occur here. Mussoorie Bush Bob has not been sighted at such a low elevation in northeast India outside of Manas.

LAND USE

- Forest
- Grassland
- Degraded forest
- Tourism

THREATS AND CONSERVATION ISSUES

- Encroachment
- Felling of trees
- Grazing
- Firewood collection
- Poaching
- Insurgency

Since 1989, this world heritage site has suffered significantly due to insurgency-related problems (Rahmani *et al.* 1989, Choudhury 1989). Between 1989 and 1992, most of the interior camps and bridges were burnt down, and the Rhinoceros and Swamp Deer populations almost wiped out. With the breakdown of administration, professional poachers and timber smugglers took full advantage of the situation. While the insurgents themselves were not always involved, the situation worsened because of the law and order problem created by them. It was only around 1995–1996 that the situation improved slightly, but it is yet to reach the pre-1989 level. There has been some encroachment by local villagers and graziers. Burning in the dry season, hunting and extraction of timber and firewood, are practiced at a non-sustainable level in the buffer zone. The park, once extremely popular with tourists, is now visited only by a small number of tourists each year. The situation in Manas has improved to a great extent, and restored its status as a World Natural Heritage Site.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Goutam Narayan, Asad R. Rahmani, Sonali Ghosh, Namita Brahma, Bibhuti P. Lahkar.

KEY REFERENCES

- Ali, S., Daniel, J.C., and Rahmani, A.R. (1985) Study of Ecology of Certain Endangered Species of Wildlife and their Habitats. The Floricans. Annual Report 1, 1984–1985. Bombay Natural History Society, Bombay. Pp. 79–83.
- BirdLife International (2003) *Saving Asia's Threatened Birds: A Guide for Government and Civil Society*. BirdLife International, Cambridge, UK.
- BirdLife International (undated) *Important Bird Areas (IBAs) in Asia: Project Briefing Book*. BirdLife International, Cambridge, UK. Unpubl.
- Brahma, N. (2015) Ecological evaluation of grassland using Bengal Florican as an indicator species in Manas National Park. Ph.D. Thesis, Department of Zoology, Gauhati University, Guwahati.
- Choudhury, A.U. (1989) S.O.S. Manas : *The Sentinel*, 7 May, Guwahati.
- Choudhury, A.U. (2006a) *Birds of Manas National Park*. Gibbon Books & The Rhino Foundation, Guwahati. 84 pp.
- Choudhury, A.U. (2006b) Rediscovery of Manipur Bush-Quail *Pedicularia manipurensis*. *Mistnet* 7(2): 15–16.
- Choudhury, A.U. (2006c) Unbelievable! The White-winged Duck *Cairina scutulata* in Manas National Park. *Mistnet* 7(3): 13–14.
- Choudhury, A.U. (2010) *The Vanishing Herds: the Wild Water Buffalo*. Gibbon Books & The Rhino Foundation with support from COA, Taiwan, Guwahati. 184 pp.
- Choudhury, A.U. (2011a) Records of Black-breasted Parrotbill *Paradoxornis flavirostris* from Manas National Park, Assam, in north-east India. *Forktail* 27: 106–107.
- Choudhury, A.U. (2011b) Manas National Park: Assam's birding hotspot. *Birding Asia* 16: 62–70.
- Ghosh, S., Lahkar B.P., Deuti, K., Nath, A., Banerji-Bhattacharya, G., Brahma, N., Das, J.P., Sinha, A., Lahkar, D., Barukial, B., Charles, L.P., and Adhikari, A.S. (2014) Survey for Endangered Grassland Species in Manas National Park. Survey Report submitted to Field Directorate Tiger Project, Manas. Govt of Assam.
- Jain, S.K. and Sastry, S.R.K. (1983) Botany of some tiger habitats in India. Botanical Survey of India, Department of Environment, Government of India.
- Lahkar B.P. (2008) Ecology and management of grassland with special reference to grass and bird communities in Manas National Park, Assam. Ph.D. Thesis, Department of Zoology, Gauhati University, Guwahati.
- Narayan, G. (1992) Ecology, distribution and conservation of the Bengal Florican *Houbaropsis bengalensis* (Gmelin) in India. Ph.D. Thesis, University of Bombay.
- Narayan, G., Sankaran, R., Rosalind, L., and Rahmani, A.R. (1989) The Floricans *Houbaropsis bengalensis* and *Sypheotides indica*. Annual Report 1988–89. Bombay Natural History Society. 39 pp.
- Rahmani, A.R., Narayan, G., and Rosalind, L. (1989) Threat to India's Manas Tiger Reserve. *Tigerpaper* 14(2): 22–28.
- Rahmani, A.R., Narayan, G., Rosalind, L., and Sankaran, R. (1991) Status of the Bengal Florican *Houbaropsis bengalensis* in India. *JBNHS* 88: 349–375.
- Sharma, S. (1988) A new record of the Assam Roof Turtle *Kachuga sylhetensis* (Jerdoni) from the Manas Wildlife Sanctuary. *JBNHS* Pp 85: 623.

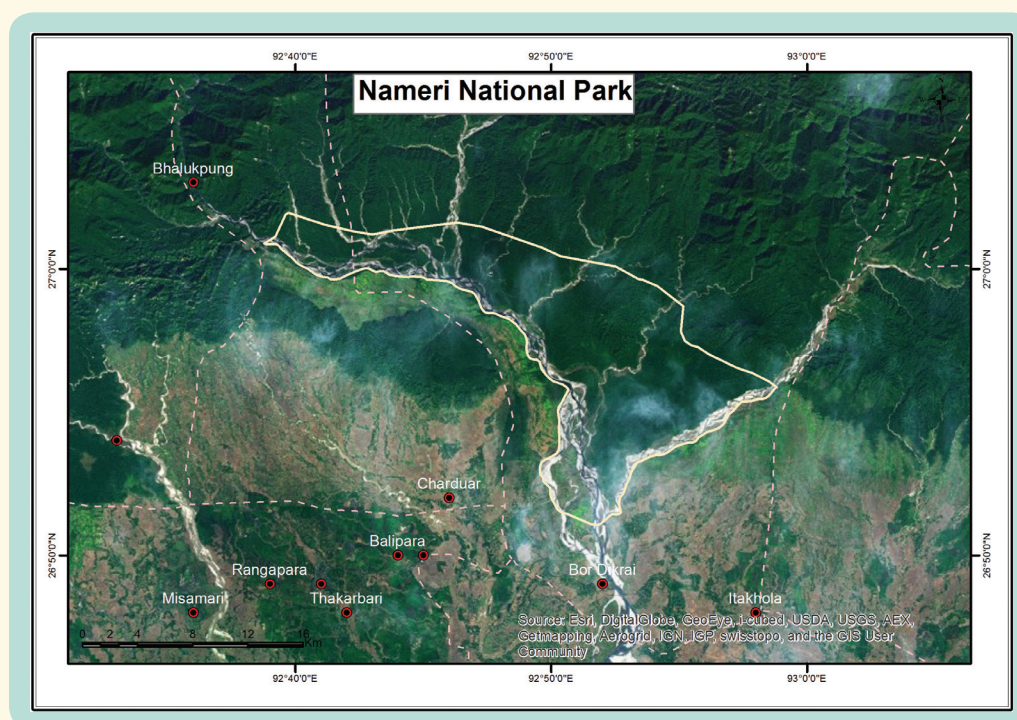
NAMERI NATIONAL PARK

IN-AS-32

IBA Site Code	: IN-AS-32	Rainfall	: 2,000–2,800 mm
Administrative Region (State)	: Assam	Temperature	: 7 °C to 35 °C
District	: Sonitpur	Biogeographic Zone	: Northeast
Coordinates	: 27° 00' 36" N, 92° 47' 24" E	Habitats	: Moist Evergreen, Tropical
Ownership	: State		Semi-evergreen Forest, Tropical
Area	: 20,000 ha		Moist Deciduous Forest, Tropical
Altitude	: 100–350 msl		Grassland, Riverine Vegetation

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya, Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS: National Park, established 1998. Declared Tiger Reserve.



GENERAL DESCRIPTION

Located in the district of Sonitpur, 40 km from Tezpur town in northern Assam, Nameri National Park is also a tiger reserve under Project Tiger. This park is on the interstate border with Arunachal Pradesh. Relatively better known among the new protected areas of Assam, Nameri was earlier part of Naduar Reserve Forest. The river Jia-Bhareli and its tributaries, namely Nameri, Upper Dikorai, and Bor Dikorai, flow through the park. Nameri NP is beautiful, with snow-capped Himalayan peaks visible on clear winter days.

Nameri is home to a number of globally Threatened birds and mammals. For the Endangered White-winged Duck *Asarcornis scutulata*, the park has now the only noteworthy population on the north bank of the Brahmaputra (Choudhury 2000a, 2000b). An added advantage is the presence of Pakke (Pakhui) Wildlife Sanctuary across the

state border in Arunachal Pradesh, which is about 86,200 ha. For many species, the two PAs form a contiguous large wilderness.

The terrain in Nameri is gently sloping plain, with typical *bhabar* and *terai* habitats. Towards the north, the promontories of the Arunachal Himalaya are seen. Most of Nameri is forested and grassland is found along the rivers. There are a number of pools within the jungle.

Nameri National Park can be classified into nine distinct vegetation types: i. moist evergreen, ii. moist semi-evergreen, iii. deciduous forest, iv. grassland, v. scrub, vi. mixed forests, vii. degraded forests, viii. riverine forest, and ix. cultivated land. Moist Semi-evergreen Forest covers about 16,000 ha, followed by Grassland (1,570 ha). The Evergreen Forest is dominated by *Duabanga grandiflora*, *Mesua ferrea*, and species of *Tetrameles*, *Eugenia*, and *Terminalia*.

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardea insignis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Bengal Florican (old record)	<i>Houbaropsis bengalensis</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
Masked Finfoot	<i>Heliopais personata</i>

VULNERABLE

Asian Woollyneck	<i>Ciconia episcopus</i>
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Eastern Imperial-eagle	<i>Aquila heliaca</i>
Swamp Francolin	<i>Francolinus gularis</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
White-throated Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Grey-crowned Prinia	<i>Prinia cinereocapilla</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>
Great Thick-knee	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Marsh Babbler	<i>Pellorneum palustre</i>
---------------	----------------------------

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Pied Falconet	<i>Microhierax melanoleucos</i>
Rufous-throated Partridge	<i>Arborophila rufogularis</i>
Asian Emerald Cuckoo	<i>Chrysococcyx maculatus</i>
Golden-throated Barbet	<i>Megalaima franklinii</i>
Blue-throated Barbet	<i>Megalaima asiatica</i>
Stripe-breasted Pied Woodpecker	<i>Dendrocopos atratus</i>
Bay Woodpecker	<i>Blythipicus pyrrhotis</i>
Black-winged Cuckooshrike	<i>Coracina melaschistos</i>
Rosy Minivet	<i>Pericrocotus roseus</i>
Short-billed Minivet	<i>Pericrocotus brevirostris</i>
Himalayan Bulbul	<i>Pycnonotus leucogenys</i>
White-throated Bulbul	<i>Alophoixus flaveolus</i>
Orange-bellied Leafbird	<i>Chloropsis hardwickii</i>
Black-breasted Thrush	<i>Turdus dissimilis</i>
Slaty-backed Forktail	<i>Enicurus schistaceus</i>
Green Cochoa	<i>Cochoa viridis</i>
Slaty-bellied Tesia	<i>Tesia olivea</i>
Small Niltava	<i>Niltava macgrigoriae</i>
Black-throated Sunbird	<i>Aethopyga saturata</i>
Streaked Spiderhunter	<i>Arachnothera magna</i>
Maroon Oriole	<i>Oriolus traillii</i>
Grey Treepie	<i>Dendrocitta formosae</i>

AVIFAUNA

Nameri is very rich in avifauna. Barua & Sharma (2005) recorded 374 species of birds, and the total is now more than 400 (A.U. Choudhury, *pers. comm.*). Perhaps among the largest and most secure population of White-winged Duck is found



CHRISTY WILLIAMS

Nameri National Park is famous for regular sightings of White-winged Duck *Asarcornis scutulata*. Large numbers of birdwatchers come specifically to see this bird



DHRTIMAN MUKHERJEE

Nameri in Assam and Pakke Wildlife Sanctuary in Arunachal form a large complex of undisturbed forest, that has nearly 400 bird species

here (Das 1995), along with 25 Threatened species and biome species such as the Crow-billed Drongo *Dicrurus annectans*, Black-backed Forktail *Enicurus immaculatus*, Sultan Tit *Melanochloa sultanea*, Lesser Necklaced Laughingthrush *Garrulax monileger*, Greater Necklaced Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *Dryonastes ruficollis*, Grey Peacock-pheasant *Polyplectron bicalcaratum*, and Himalayan Flameblack *Dinopium shorii*. Masked Finfoot *Heliopais personata* is also reported here, although not many have seen this shy bird.

White-winged Duck *Asarcornis scutulata*, an Endangered species, is found in Nameri and the site additionally qualifies for congregatory criteria A4i as it holds 1% of its biogeographic population. In 1997, six birds were recorded (Zafar-ul Islam, *pers. comm.* 2003), the 1% threshold being five individuals.

In winter, Ibisbill *Ibidorhyncha struthersii* is occasionally seen on the river bank, and Hodgson's or White-throated Bushchat *Saxicola insignis* in the tall grassland near rivers and streams.

Nameri is also good for forest raptors. Talukdar & Das (1997) identified 16 species of raptors, some of them Near Threatened. Nameri river is famous for its large numbers of Great Cormorant *Phalacrocorax carbo* and pratincoles. Talukdar (1997) reported up to 500 Great Cormorant.

Besides the Biome 9 (Indo-Chinese Tropical Moist Forest) species in Nameri, some species of Biome 7 (Sino-Himalayan Temperate Forest) have been seen, such as Slaty-blue Flycatcher *Ficedula tricolor*, Aberrant Bush-warbler *Cettia flavolivacea*, and Yellow-bellied Flowerpecker *Dicaeum melanoxanthum*. But mainly Biome 8 (Sino-Himalayan Sub-tropical Forest) species are found in this IBA.

Wielen (2007), while birding in Nameri NP, spotted a Chestnut-cheeked Starling *Sturnus philippensis* in a flock of Spot-winged Starling *Saroglossa spiloptera*. This is the first record from India. Praveen (2008) mentions reports of more than 1,000 Amur Falcon *Falco amurensis* from this IBA. This bird is a passage migrant through the Indian subcontinent and is seen along the western coast and eastern part of the country during November. Steijn & Vries (2009) reported a Black-throated Diver *Gavia arctica* from Nameri, the first record for Assam; this bird is described as a vagrant by Rasmussen & Anderton (2012). Pandit (2010) observed and photographed a male Horned Lark *Eremophila alpestris* from Nameri NP. This is thought to be the first record for Assam, as Rasmussen & Anderton (2012) do not show its distribution in Assam and mention that it winters up to 1,500 m. The individual spotted by Pandit (2010) was at a much lower altitude.

IN-AS-32

ROHIT NANIWADEKAR



Nameri and Pakke are known for hornbill species such as Rufous-necked Hornbill *Aceros nipalensis* (above) and Great Pied Hornbill *Buceros bicornis* (below)

RAJU KASAMBE



OTHER KEY FAUNA

Nameri is famous for its population of Asiatic Elephant *Elephas maximus* and Tiger *Panthera tigris*. It is considered an important site for the long-term protection of these mammals. Therefore, Project Tiger and Project Elephant are funding the management of this site. Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, and Gaur *Bos gaurus* are the common ungulates. Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Jackal *Canis aureus*, Large Indian Civet *Viverra zibetha*, and Small Indian Civet *Viverricula indica* are some of the smaller predators reported from Nameri. Good numbers of Eurasian Otter *Lutra lutra* are found in the streams and rivers, wherever fishing is prohibited.

The endemic Assam Roofed Terrapin *Pangshura sylhetensis* was reported. Keeled Box Turtle *Pyxidea mouhotii*, present in evergreen hill forest streams of northeast India and east Asia (Daniel 2002), is also found in Nameri.

LAND USE

- Forest
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

- Encroachment
- Overgrazing
- Illegal fishing
- Occasional poaching
- Human-animal conflict

Nameri is under grave threat from potential encroachers who have already cleared the adjacent Balipara and Naduar Reserve Forests. Even the slightest opportunity due to slack administration may put the park in jeopardy. The site is in need of great conservation attention.

KEY CONTRIBUTORS

Prashanta Saikia, Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Barua, M. and Sharma, P. (2005) The birds of Nameri National Park, Assam, India. *Forktail* 21: 15–26.
- Choudhury, A.U. (2000a) *The Birds of Assam*. Gibbon Books and WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2000b) Conservation of the White-winged Wood Duck *Cairina scutulata* in India. Pp. 52–64. In: Rahmani, A.R. and Ugra, Gayatri (Eds) *Birds of Wetlands and Grasslands*:



DHIRTIMAN MUKHERJEE

Silver-breasted Broadbill *Serilophus lunatus* is found in Eastern Himalaya in semi-evergreen and evergreen forest. Presence of such species increases the value of IBAs like Nameri

- Proceedings of the Sálím Ali Centenary Seminar on Conservation of Avifauna of Wetlands and Grasslands*. Bombay Natural History Society, Mumbai. Pp. x + 228.
- Daniel, J.C. (2002) *The Book of Indian Reptiles and Amphibians*. Bombay Natural History Society, Mumbai, Pp. 238 (see p. 29).
- Das, R.K. (1995) White-winged Duck in Namery Sanctuary. *IWRB TWRG Newsletter* 8: 17–18.
- Pandit, D.S. (2010) Horned Lark *Eremophila alpestris* in Nameri National Park, Tezpur district, Assam. *Indian BIRDS* 5(6): 178.
- Praveen J. (2008) In the news: Migration time for Amur Falcons. *Indian BIRDS* 4(1): 36–37.
- Rasmussen, P.C. and Anderton, J.C. (2012) *Birds of South Asia: The Ripley Guide*. Vols 1 & 2, 2nd edn. National Museum of Natural History – Smithsonian Institution, Michigan State University, and Lynx Edicions, Washington DC, Michigan, and Barcelona.
- Steijn, L. and Vries, K.D. (2009) Black-throated Loon in Assam, India, in January 2008. *Dutch Birding* 31: 301–302.
- Talukdar, B.K. (1997) Record of largest flock of Great Cormorant in Nameri Sanctuary, Assam. *Newsletter for Birdwatchers* 37: 65.
- Talukdar, B.K. and Das, R.K. (1997) Record of birds of prey in Nameri WLS, Assam. *Newsletter for Birdwatchers* 37: 50–51.
- Wielen, P.V.D. (2007) Chestnut-cheeked Starling *Sturnus philippensis*: new for the Indian subcontinent. *Forktail* 23: 173–174.

ORANG NATIONAL PARK

IN-AS-33

IBA Site code	: IN-AS-33	Altitude	: 40–50 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–3,000 mm
District	: Sonitpur	Temperature	: 7 °C to 32 °C
Coordinates	: 26° 38' 18" N, 92° 23' 18" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Moist Deciduous Forest, West Savanna Grassland, Wetland
Area	: 7,881 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131), A3 biome restricted species)
A4ii ($\geq 1\%$ of biogeographic population)

PROTECTION STATUS: Established as Game Reserve 1915, upgraded to Wildlife Sanctuary 1985, then to National Park 1999.



GENERAL DESCRIPTION

Rajiv Gandhi Orang National Park is well known as an important habitat of the Indian One-horned Rhinoceros *Rhinoceros unicornis*. This national park lies 18 km off the national highway from Orang town and 15 km off the highway from Dhansirimukh town. The distance from Guwahati to Orang NP is 140 km. The park is situated on the northern bank of the Brahmaputra river. The Pachnoi and Dhansiri rivers flow along its eastern and western boundaries respectively. Both these rivers are tributaries of the Brahmaputra. The terrain is flat, being the floodplain of these rivers. Two distinct alluvial terraces are found: the lower Orang which is of more recent origin along the Brahmaputra, and the older upper Orang to its north, separated by a high bank traversing the park from east to west.

Orang was earlier a pure alluvial grassland, probably maintained by grazing and fire by villagers. In 1915, it was declared a game reserve. The villagers deserted the area due to an epidemic and other prevalent natural calamities. In 1932, plantation of fast growing local species such as *Albizia procera* and *Lagerstroemia flosreginae* was started, and some parts of the reserve were denotified in 1928 to settle farmers from the erstwhile East Bengal. Intensive plantation was started in 1962. Along with the earlier planted local species, *Dalbergia sissoo*, *Acacia catechuoides*, *Tectona grandis*, *Artocarpus chaplasha*, *Terminalia* spp., *Gmelina arborea*, and *Bombax ceiba* were planted. In 1969, Professional Grazing Reserve (PGR) areas east of the River Pachnoi were included in the game reserve.



Orang National Park, renamed as Rajiv Gandhi National Park, forms the larger conservation landscape that covers Kaziranga National Park and Laokhowa Burhachapori. Orang is important for the protection of Rhinoceros and other wildlife also

CRITICALLY ENDANGERED

White-rumped Vulture (old record)	<i>Gyps bengalensis</i>
Slender-billed Vulture (old record)	<i>Gyps tenuirostris</i>
Red-headed Vulture (old record)	<i>Aegypius calvus</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Asian Woollyneck	<i>Ciconia episcopus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Bristled Grassbird	<i>Chaetornis striatus</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Finn's Baya (Yellow Weaver)	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaetus</i>
Great Thick-knee	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>

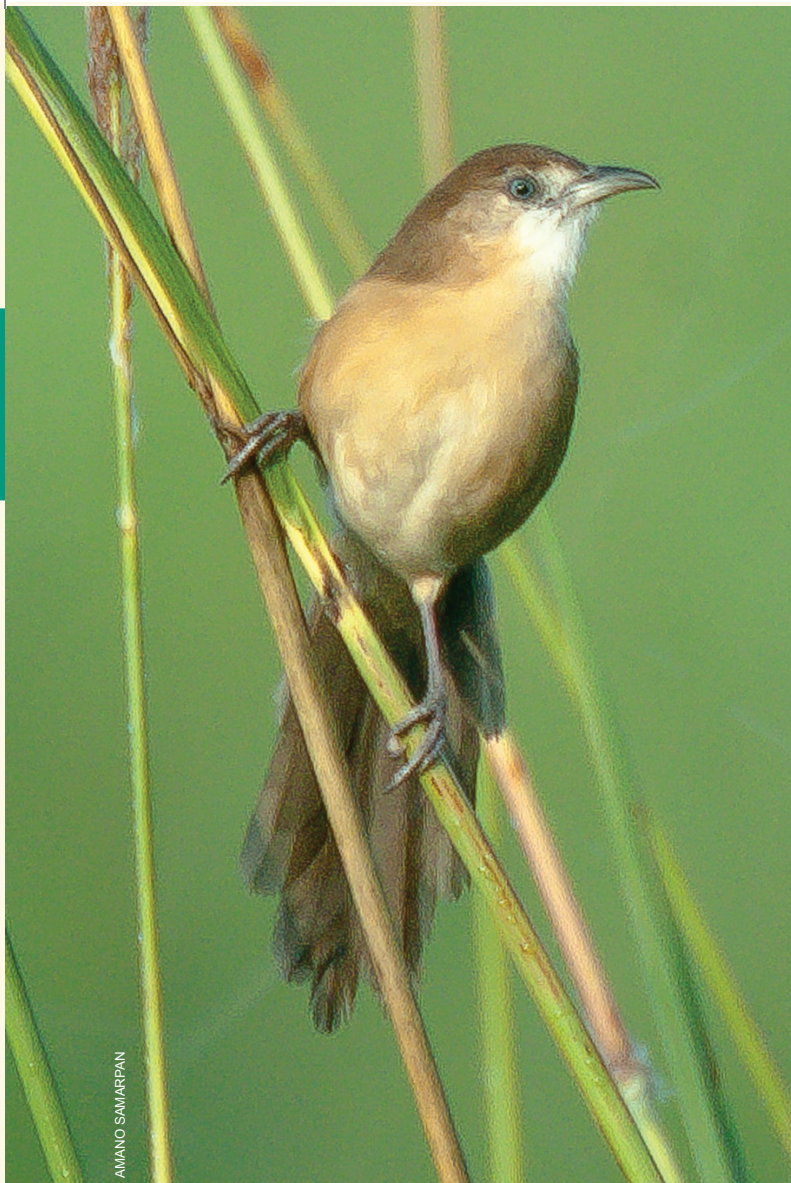
Mainly established to save the highly endangered Rhinoceros, the grasslands of Orang NP also support healthy populations of Swamp Francolin *Francolinus gularis* and Bengal Florican *Houbaropsis bengalensis*. Lesser Adjutant *Leptoptilos javanicus* and Pallas's Fish-eagle *Haliaeetus leucoryphus* nest in the park (Rahmani *et al.* 1990). There is also a more recent sighting of the Bristled Grassbird *Chaetornis striatus* (Choudhury 2000).

At one time, Orang was one of the finest representatives of natural wet, alluvial grasslands of the floodplains of the Brahmaputra river (much like Kaziranga). Even now, more than 60% of the park bears grasses such as *Arundo donax*, *Imperata cylindrica*, *Saccharum* spp., *Cynodon dactylon*, *Phragmites karka*, and *Andropogon* spp. Natural forest constitutes only 2.6%, while plantation covers 13.6% of this park. Waterbodies (*beels*) and swamps constitute about 12% of the area.

In order to get better funding, there is a plan to declare Orang NP as a Tiger Reserve.

AVIFAUNA

Orang is one of the most important sites for birds of wet tall grasslands of the Brahmaputra floodplains. Almost all species of conservation concern are found in this small 8,000 ha national park. During surveys between 1985 and 1989, Rahmani *et al.* (1990) estimated a population of 30–40



AMANO SAMARPAN



DHRITIMAN MUKHERJEE

Almost 60% of Orang is under grasses, providing habitat for species such as Slender-billed Babbler *Turdoides longirostris* (left) and Bengal Florican *Houbaropsis bengalensis* (right)

Bengal Florican. In 2014, five adult territorial male Bengal Florican were sighted during BNHS surveys (Rahmani *et al.* 2014). There could be some more males which remained undetected.

This IBA contains about 225 bird species (Talukdar & Sharma 1995), including rarities such as Baer's Pochard *Aythya baeri*, Blyth's Kingfisher *Alcedo hercules* (Near Threatened), and Finn's Baya or Yellow Weaver *Ploceus megarhynchus*. Slender-billed Babbler *Turdoides longirostris* is frequently sighted. There is a good population of Lesser Adjutant *Leptoptilos javanicus* and Asian Woollyneck *Ciconia episcopus* in this park.

This site qualifies as an IBA on the basis of four criteria: it has globally Threatened species (A1), the site lies in Assam Plains Endemic Bird Area (A2), eight out of 13 biome-restricted species have been found here (A3), and it has more than 1% of the population of the Bengal Florican (A4ii).

Till the mid 1990s, vultures were quite common in and around the park, but during recent surveys by the BNHS team, no vultures have been sighted since 2005 (Sachin Ranade, *in litt.* 2014).

Stattersfield *et al.* (1998) have listed three species in the

Assam Plains EBA, namely Manipur Bush-quail *Perdica manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris*, and Marsh Babbler *Pellorneum palustre*. Considering the extent of grassland habitat, the last two species are likely to be present in this site.

Orang is also one of the few protected areas where Finn's Baya or Yellow Weaver *Ploceus megarhynchus* is found, the other being Manas (another IBA). Orang is considered one of the three Outstanding IBAs of Assam (BirdLife International 2003).

OTHER KEY FAUNA

Orang NP was established for the protection of the Indian Rhinoceros. More than 100 rhinos are found here, despite intensive poaching pressure. A healthy population of Tiger *Panthera tigris* is supported by herbivores such as Hog Deer *Axis porcinus*, Wild Boar *Sus scrofa*, and a very large number of domestic animals that roam just outside the park. This area also has a small population of wild Asiatic Elephant *Elephas maximus* and feral Asiatic Water Buffalo *Bubalus arnee*. Ganges Dolphin *Platanista gangetica* occurs in the rivers. Chinese Pangolin *Manis*

pentadactyla, Chinese Porcupine *Hystrix brachyura*, Small Civet *Viverricula indica*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Indian Smooth-coated Otter *Lutrogale perspicillata*, Eurasian Otter *Lutra lutra* (Das 2010) and Rufous-tailed Hare *Lepus nigricollis ruficaudatus* are some of the small mammals of the park.

The Swamp Deer *Rucervus duvaucelii* population was exterminated by 1972, when licensed hunting prevailed (Talukdar & Sharma 1995). Old records also show the existence of Hispid Hare *Caprolagus hispidus*, but it is not found in Orang now. The Critically Endangered Pygmy Hog *Sus salvanius* (= *Porcula salvania*) was introduced in 1976, rather unsuccessfully, but during 2011 to 2014, a total of 50 Pygmy Hogs were introduced successfully in the grasslands of Orang under the supervision of Dr. Goutam Narayan and the Forest Department. The reintroduced animals are being monitored regularly and seem to have adapted to their new home. Some animals were seen 3–5 km away from the release sites.

Reptiles are represented by the Indian Tent Turtle *Kachuga tentoria*, Brown Roofed Turtle *K. smithii*, Malayan Box Turtle *Cuora amboinensis*, Eastern Hill Terrapin *Melanochelys tricarinata*, Spotted Black Terrapin *Geoclemys hamiltonii*, and Indian Softshell Turtle *Aspideretes gangetica* (Talukdar & Sharma 1995). All these are listed in the Indian Wildlife (Protection) Act, 1972. Most common of all the reptiles is Bengal Monitor Lizard *Varanus bengalensis*, which can be seen frequently in the park.

A new species of frog, *Kalophrynus orangensis*, was described from Orang (Ahmed 2002).

LAND USE

- Tourism and recreation\
- Conservation and research

THREATS AND CONSERVATION ISSUES

- Poaching
- Encroachment
- Soil erosion
- Livestock grazing
- Invasive species

Erosion by the Dhansiri river, occasional attempts by the surrounding villagers to encroach, and increasing cattle population in the fringe areas are some of the key conservation issues. Though poaching of rhinoceros is a constant threat, in recent years the population of rhinos has increased. Environmental awareness campaign should be started in the surrounding villages. A more detailed study on birdlife, especially threatened species should be conducted. Control of invasive plant species, in the pure grassland areas should be done. It is necessary to post highly motivated officers in the area to restore Orang to its former glory.

KEY CONTRIBUTORS

Bhupen Talukdar, Anwaruddin Choudhury, Asad R. Rahmani, Biswajit Chakdar, Manabendra Ray Choudhury.

KEY REFERENCES

- Ahmed, M.F. (2002) Amphibians of Northeast India. *The Rhino Foundation for nature in NE India Newsletter* 4: 15–16.
- BirdLife International (2003) *Saving Asia's Threatened Birds: A Guide for Government and Civil Society*. BirdLife International, Cambridge, UK.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Das, Chatrapati (2010) First record of Eurasian otter (*Lutra lutra* L.) in Raiv Gandhi Orang National Park, Assam. *Tigerpaper* 37(3): 32.
- Rahmani, A.R., Narayan, G., Rosalind, L., and Sankaran, R. (1990) Status of the Bengal Florican in India. In: Status and Ecology of the Lesser and Bengal Floricans, with reports on Jerdon's Courser and Mountain Quail. Final Report. Bombay Natural History Society. Pp. 55–78.
- Rahmani, A.R., Kalra, M., Shinde, N., and Khonsai, N. (2014) Studying movement pattern and dispersal of the Bengal Florican (*Houbaropsis bengalensis*): a Satellite Telemetry Pilot Project: Annual Progress Report, 2013–2014. Bombay Natural History Society, Mumbai. Pp. 40.
- Talukdar, B.N. and Sharma, P. (1995) Checklist of the Birds of Orang Wildlife Sanctuary. Privately distributed, Guwahati.
- Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK. Pp. 846.

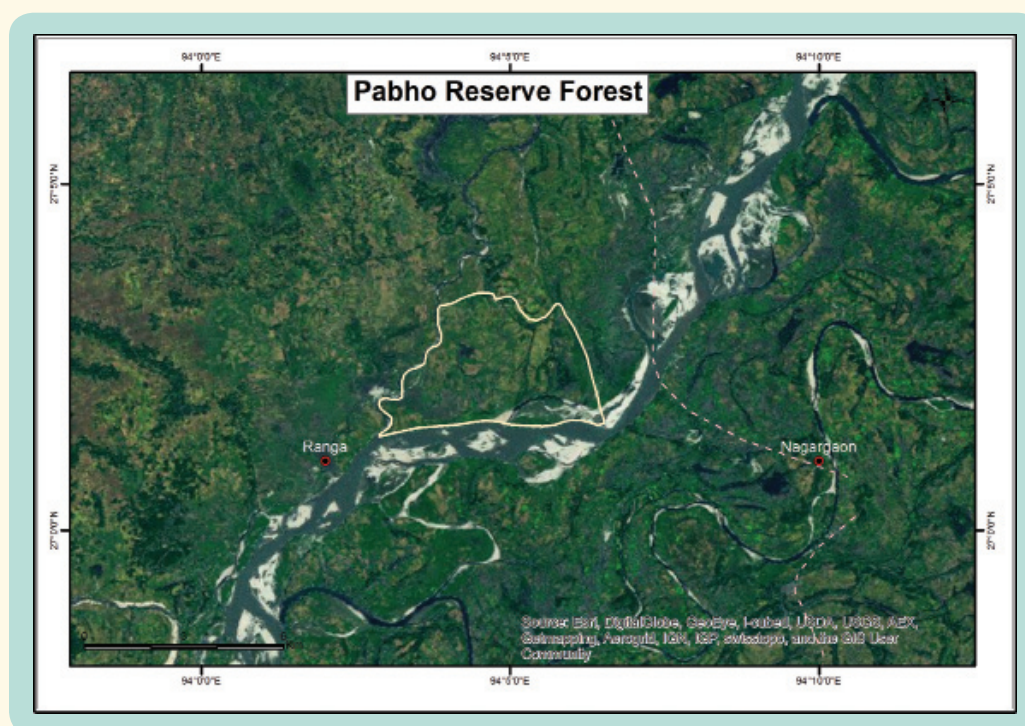
PABHO RESERVE FOREST

IN-AS-34

IBA Site Code	: IN-AS-34	Altitude	: 90 msl
Administrative Region	: Assam	Rainfall	: 2,500–3,500 mm
District	: Lakhimpur	Temperature	: 7 °C to 35 °C
Coordinates	: 27° 03' 13" N, 93° 59' 49" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Freshwater Swamp, Subtropical Secondary Scrub
Area	: 4,900 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS: Not officially protected. IBA in Danger.



GENERAL DESCRIPTION

This site is located near the confluence of the Ranga river with Khabolu river, and consists of degraded grassland with *beels* and marshes. The woodland has been completely destroyed due to felling. This site was known as Milroy Buffalo Sanctuary during British days, as a good number of Indian Wild Water Buffalo *Bubalis arnee* (= *bubalus*) used to occur (Choudhury 1994, 2010). Situated 20 km south of Lakhimpur town, the district headquarters, this wetland complex is an important site for waterbirds. In view of severe degradation over the years, this site may be among the ones which, in the near future, have to be delisted. At present it is classified as an IBA in Danger.

AVIFAUNA

More than 100 species have been listed, but more

are likely to occur (A.U. Choudhury, *pers. comm.* 2003). Among Threatened species, those regularly seen are Greater Adjutant *Leptoptilos dubius*, Lesser Adjutant *Leptoptilos javanicus*, and Swamp Francolin *Francolinus gularis*. Spot-billed Pelican *Pelecanus philippensis* also occurs. White-winged Duck *Asarcornis scutulata* has not been reported in recent years (Choudhury 2000). A few thousand waders and ducks winter in the area. It is also a potential site for the Black-breasted Parrotbill *Paradoxornis flavirostris*, considered Vulnerable by BirdLife International (2001). Proper surveys are required to find out whether its grassland habitat still exists or not.

The Gyps vultures that were present earlier in large numbers are not seen now. Only an occasional bird is sighted.



ASAD R. RAHMANI

Pabho Reserve Forest is under tremendous pressure from illegal felling and grazing. The grassland and marshes have been encroached upon. This site can be listed as an IBA in Danger

OTHER KEY FAUNA

Ganges River Dolphin *Platanista gangetica* is seen in the Khabolu river, while the Indian Wild Water Buffalo has become stray. Tiger *Panthera tigris* is an occasional visitor (A.U. Choudhury, *pers. comm.* 2003). A recent survey located a number of antlers of the Threatened Swamp Deer *Rucervus duvaucelii*, which survived till the 1980s (Choudhury 2013).

LAND USE

- Forestry
- Agriculture
- Fishing

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
---------------------	-------------------------------

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>
-------------------------------	----------------------------------

THREATS AND CONSERVATION ISSUES

- Encroachment for agriculture
- Reclamation and siltation of beels
- Fishing
- Poaching of birds
- Pesticides

Encroachment is a major concern for the area, as about a third is already under illegal cultivation. Reclamation of beels, excessive fishing, and poaching of birds are other major issues. Some areas were secured through plantation and the enclosures included some of the last surviving beels (e.g., Kutabali) in recent years (A.U. Choudhury, *pers. comm.* 2014). If properly protected, this site has the potential to become a very important waterfowl habitat.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Bikul Goswami.

KEY REFERENCES

- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. 2 Vols. BirdLife International, Cambridge, UK.
- Choudhury, A.U. (1994) The decline of wild water buffalo in Northeastern India. *Oryx* 28(1): 70–73.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and WWF-India, NE Regional Office, Guwahati. Pp. 240.
- Choudhury, A.U. (2010) *The Vanishing Herds: the wild water buffalo*. Gibbon Books & The Rhino Foundation, Guwahati with support from COA, Taiwan. 184 pp.
- Choudhury, A.U. (2013) *The Mammals of North East India*. Gibbon Books & The Rhino Foundation, Guwahati with support from COA, Taiwan. 432 pp.

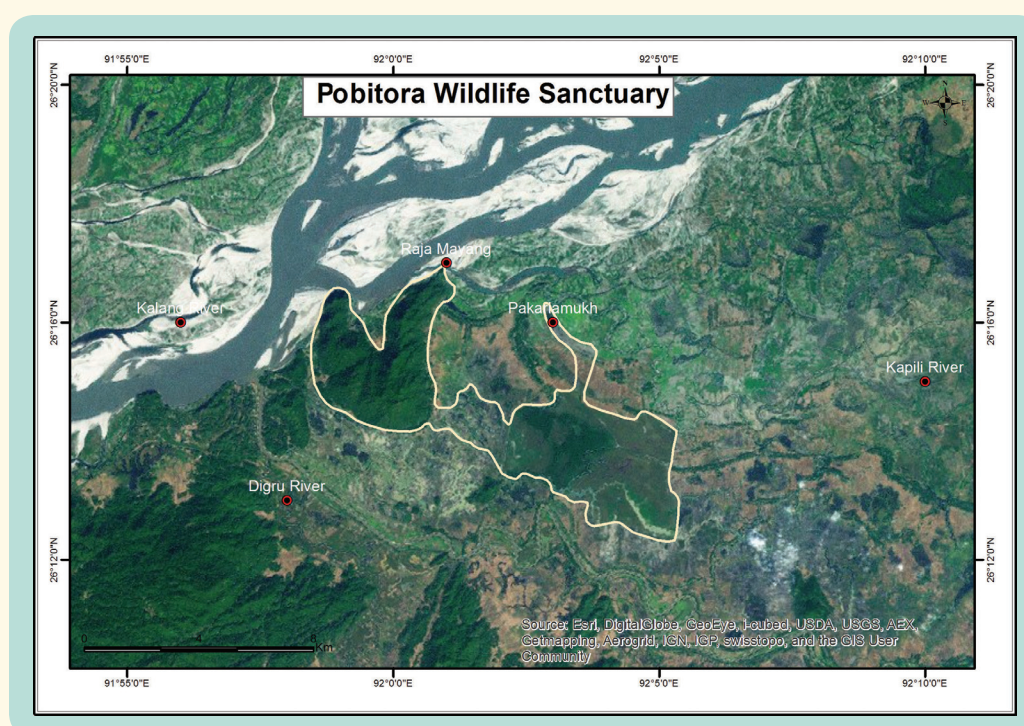
POBITORA WILDLIFE SANCTUARY

IN-AS-35

IBA Site Code	: IN-AS-35	Altitude	: 50 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–2,900 mm
District	: Morigaon	Temperature	: 7 °C to 35 °C
Coordinates	: 26° 09' 28" N, 92° 10' 48" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Moist Deciduous Forest, Tropical Grassland, Freshwater Swamp
Area	: 3,883 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains), A4iii (≥20,000 waterbirds)

PROTECTION STATUS: Wildlife Sanctuary, established July, 1987.



GENERAL DESCRIPTION

Located close to Guwahati, the capital of Assam, Pobitora is high on the agenda of visitors to northeast India. It is only an hour's drive from the capital. The sanctuary is known for its dense population of Indian One-horned Rhinoceros *Rhinoceros unicornis*. At least 93 individuals are found in 3,883 ha, making it the most densely populated rhino area in the world! The original sanctuary area is flat terrain, being on the floodplains, and consists of grassland (c. 70%) with c. 100 ha of forest and some waterbodies (*beels*). Raja Mayong hill, which has been included subsequently in this sanctuary, is an isolated hillock covered with Moist Deciduous Forest.

Pobitora is traversed by seasonal channels that become lakes in winter. These include Garanga, Haduk, and Tuplung. Tamuliduba is a large area close to the main road.

Crop fields are present all around this small reserve.

Pobitora was a traditional grazing reserve, where the villagers used to graze their livestock. It was declared as a reserve forest and then a wildlife sanctuary to protect the Rhino. In winter, Pobitora becomes a birder's haven, with thousands of waterfowl thronging the wetlands.

Pobitora can be divided into three distinct categories of habitat: forest, grassland, and waterbodies or *beels*. Only about 13% of the total area is under tree cover, consisting of *Albizia procera*, *Bombax ceiba*, *Lagerstromia flosreginae*, and *Barringtonia acutangula*. About 72% of Pobitora consists of wet savannah with *Arundo donax*, *Erianthus ravennae*, *Phragmites karka*, *Imperata cylindrica*, and *Saccharum* spp. (Barua 1998, Choudhury 2000). The remaining area is covered by *beels*. Water Hyacinth *Eichornia crassipes* is a major problem, especially to waterfowl, as it forms thick

CRITICALLY ENDANGERED

White-bellied Heron (?)	<i>Ardea insignis</i>
White-rumped Vulture (old record)	<i>Gyps bengalensis</i>
Slender-billed Vulture (old record)	<i>Gyps tenuirostris</i>
Bengal Florican (old record)	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Yellow Weaver (?)	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Marsh Babbler	<i>Pellorneum palustre</i>
---------------	----------------------------

mats on the water surface. *Euryale ferox* is seen in some open areas. This is a very good breeding ground for Pheasant-tailed Jacana *Hydrophasianus chirurgus* and Bronze-winged Jacana *Metopidius indicus*.

AVIFAUNA

The site contains more than 190 bird species, including many threatened ones such as the White-bellied Heron *Ardea insignis*, Lesser Adjutant *Leptoptilos javanicus*, Greater Adjutant *L. dubius*, Bengal Florican *Houbaropsis bengalensis*, and Swamp Francolin *Francolinus gularis*.

The Spot-billed Pelican *Pelecanus philippensis* used to breed here (Choudhury 2000), but no longer does so. The Bengal Florican has not been seen since the mid 1990s, due to disturbance.

Gyps vultures that were extremely common till the mid 1990s have not been sighted during the last 10 years by the BNHS team (Sachin Ranade, *in litt.* 2014).

Pobitora grasslands and wetlands harbour most of the representative birds of the Brahmaputra floodplains, such as Striated Babbler *Turdoides earlei* and Yellow Weaver *Ploceus megarhynchus*.

The wetlands of Pobitora attract thousands of waterfowl during winter. The site qualifies for A4iii criteria, as more than 20,000 waterfowl are regularly found there. Talukdar (1996) has recorded 57 wetland species, including 16 ducks and geese and four species of storks. During a waterfowl count in 1997, more than 55,000 birds of 36 species were seen (Barua 1998).

The site lies in the Indo-Gangetic Plains (Biome 12) and the Assam Plains Endemic Bird Area (EBA 131) where Stattersfield *et al.* (1998) have identified three species wholly confined to this EBA (Manipur Bush-quail *Perdicula manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris*, and Marsh Babbler *Pellorneum palustre*). The last species has been reported from this site (Mrigen Barua, *pers. comm.* 2001).

BirdLife International (undated) has identified 13 species in Biome 12. Of these, eight species have been identified from this site till now, and more are likely to be present. Therefore, this site also qualifies for A3 (biome-restricted assemblages) criteria.



Although Pobitora is known for the Indian One-horned Rhinoceros, its wetlands attracts thousands of waterfowl.



ASAD R. RAHMAN

Pobitora has the highest density of Indian One-horned Rhinoceros in the world. In about 38 sq. km, 93 to 95 rhinos are found

OTHER KEY FAUNA

Besides the Indian One-horned Rhinoceros, Fishing Cat *Prionailurus viverrinus*, Golden Jackal *Canis aureus*, Common Otter *Lutra lutra*, and Wild Boar *Sus scrofa* are found in the original sanctuary area, while Leopard *Panthera pardus*, Leopard Cat *Prionailurus bengalensis*, Rhesus Macaque *Macaca mulatta*, and Barking Deer *Muntiacus muntjak* are seen in Raja Mayong area. A herd of feral water buffalo *Bubalus arnee* is present. Reptiles include Brahminy Terrapin *Hardella thurjii*, Spotted Pond Terrapin *Geoclemys hamiltonii*, and various species of snakes.

LAND USE

- Forest
- Conservation
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

- Grazing
- Fishing
- Encroachment
- Poaching
- Grass collection

Being a small sanctuary surrounded by human habitation, there is constant anthropogenic threat from encroachers, poachers, fishermen, and graziers. The grassland birds are often the most affected, as in some winters there is hardly a sizeable patch of tall grassland. The destruction of the grassland started in 1998 when there was a heavy

and prolonged flood. Excessive grazing by domestic stock that followed did tremendous damage, so that till 2002, the grass could not recover to its pre-1998 level. With an ever-increasing cattle population, there is constant pressure on the grassland. A few Bengal Florican were not uncommon till the mid 1990s, one or two even up to 1998, but now they are a rarity. A large population of Swamp Francolin occurred in the area, but in 1999–2000, it was reduced to less than a third and their call was rarely heard. There is slight improvement now, but the grassland has still not been restored to the pre-1998 conditions. The villagers of the fringe area often fish in the wetlands, causing disturbance to waterfowl.

KEY CONTRIBUTORS

Mrigen Barua, Anwaruddin Choudhury.

KEY REFERENCES

- Barua, Mrigen (1998) Pabitora Wild Life Sanctuary. *Zoo's Print* 4: 9–11.
- BirdLife International (undated) *Important Bird Areas (IBAs) in Asia: Project Briefing Book*. BirdLife International, Cambridge, UK. Unpubl.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and WWF-India, NE Regional Office, Guwahati. Pp. 240.
- Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK.
- Talukdar, B.K. (1996) Diversity of water birds in Pabitora Wildlife Sanctuary. *Pavo* 34: 17–21.

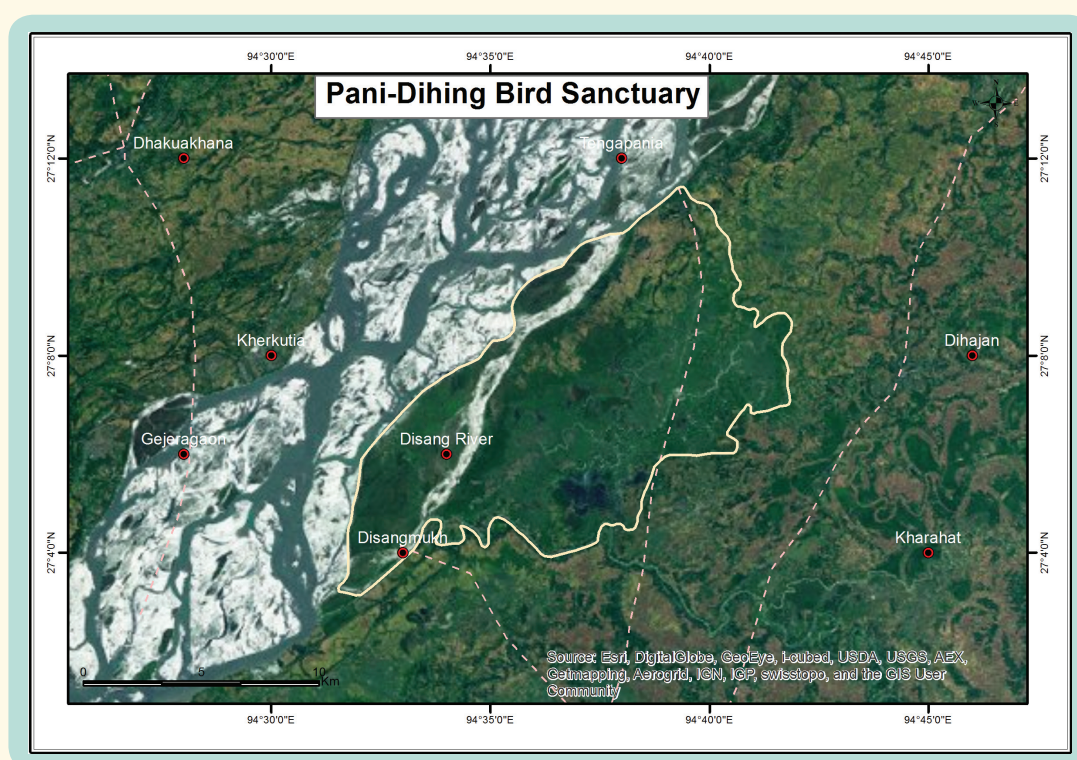
PANI-DIHING BIRD SANCTUARY

IN-AS-36

IBA Site Code	: IN-AS-36	Altitude	: 90 msl
Administrative Region (State)	: Assam	Rainfall	: 2,500–3,500 mm
District	: Sibsagar (Sivasagar)	Temperature	: 7 °C to 35 °C
Coordinates	: 27° 04' 00" N, 94° 34' 60" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Grassland, Freshwater Swamp
Area	: c. 4,000 ha		

IBA CRITERIA : A1 (Threatened species), A4iii (≥20,000 waterbirds)

PROTECTION STATUS : Bird Sanctuary, established 1995.



GENERAL DESCRIPTION

This IBA site includes Pani-Dihing Bird Sanctuary (3,393 ha) and its environs (600 ha), including Phokolai Beel and Dorou Beel. Situated 17 km north of Sibsagar town, the district headquarters, this large wetland complex lies on the south bank of River Brahmaputra, near its confluence with the tributary Disang. The terrain is flat, being on the floodplains. During monsoon, most of the area is inundated. The main *beels* (wetlands) of the area are Phokolai, Dorou (both outside the sanctuary), Sagunpora, Ghoka, Tokia, and Jarjaria. The main channels that water the area are Dimou, Boloma, Balijan, and Singorajan.

Pani-Dihing and adjacent areas are known for migratory waterfowl, while there are also important resident species. This site used to be a hunter's paradise, and people from

Sibsagar town used to come here to shoot ducks and geese. Now sport hunting has been stopped, but poisoning of waterfowl still goes on.

The strip of swampy reed jungle on the northern border bears chiefly *Arundo donax* and plants of the genus *Alpina*. Grasses *Vetiveria zizanioides* and *Saccharum spontaneum* are also common, whereas *Phragmites karka* is becoming rarer, possibly because of collection by the villagers. Thorny vines wind around these tall grasses and during the summer rainfall, the area becomes impenetrable with thick clumps of Water Hyacinth *Eichhornia crassipes*.

AVIFAUNA

More than 160 species of birds have been recorded in the area (Choudhury 1988, 1991, 2003; Barooah 1990, 1994; D.



The beels of Pani-Dihing Bird Sanctuary attract large numbers of Greylag Geese

Barooah, pers. comm. 2002). There are historic records of the Black-breasted Parrotbill *Paradoxornis flavirostris* from the area [J.R. Cripps in Hume (1888)]. By 1993, Pani-Dihing had become famous for its vast flocks of Bar-headed Goose *Anser indicus* and Greylag Goose *Anser anser*, and thousands of other waterbirds. It easily qualified for A4iii criteria ($\geq 20,000$ waterbirds), in addition to A1 criteria (significant number of Threatened species). The Endangered Greater Adjutant *Leptoptilos dubius* which breed near Sibsagar town forage in this site, among others (Choudhury 1993).

During a visit on April 16, 2010, Kasambe & Hazarika (2010) saw 12 Critically Endangered White-rumped Vulture *Gyps bengalensis* soaring high in the sky and landing in the far side of the sanctuary. Three Greater Adjutant *Leptoptilos dubius* were also sighted, along with many Lesser Adjutant *Leptoptilos javanicus*, five Black-bellied Tern *Sterna acuticauda*, and one Black-necked Stork *Ephippiorhynchus asiaticus*.

In the reed thickets on the northern border of the site, 400–500 pairs of Cattle Egret *Bubulcus ibis*, Indian Pond-heron *Ardeola grayii*, Chinese Pond Heron *Ardeola bacchus*, Little Egret *Egretta garzetta*, Purple Heron *Ardea purpurea*, Grey Heron *Ardea cinerea*, Little Cormorant *Phalacrocorax niger*, and Glossy Ibis *Plegadis falcinellus* breed. *Arundo donax* and *Phragmites karka* are the preferred grasses among which they nest (Barooah 1994).

White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* are still seen in small flocks around the sanctuary. The population is resident and nests were observed around the PA, near the villages in loose colonies even in 2014 (Sachin Ranade, pers. comm. 2014). A vulture nest survey in December, 2014 found 30 active vulture nests near Demow which is adjacent to Pani-Dihing

Bird Sanctuary. Nine nests were of Slender-billed Vulture and 31 nests were of White-rumped Vulture (Mayur Bawri, pers. comm. 2015).

OTHER KEY FAUNA

Since the mid 1990s, Asiatic Elephant *Elephas maximus* has started appearing here for a short time during migration. There are recent records of a One-horned Rhinoceros *Rhinoceros unicornis* and Tiger *Panthera tigris*. Common Otter *Lutra lutra* and Hog Deer *Axis porcinus* are regularly seen. Ganges River Dolphin *Platanista gangetica* is seen

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Baer's Pochard	<i>Aythya baeri</i>
ENDANGERED	
Greater Adjutant	<i>Leptoptilos dubius</i>
VULNERABLE	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Black-breasted Parrotbill (historic record)	<i>Paradoxornis flavirostris</i>
NEAR THREATENED	
Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
ENDEMIC BIRD AREA 131: ASSAM PLAINS	
Black-breasted Parrotbill (historic record)	<i>Paradoxornis flavirostris</i>



DHIRTIMAN MUKHERJEE

The vast swamp of Pani-Dihing Bird Sanctuary attracts more than 20,000 waterfowl in winter. It is also a refuge for resident birds such as Oriental Darter and whistling-ducks

during the monsoon in the sanctuary, and throughout the year at the confluence of the Disang and Brahmaputra rivers. Among reptiles, the Brown Roofed Turtle *Kachuga smithii*, Indian Tent Turtle *K. tentoria*, and Gangetic Softshell *Aspideretes gangeticus* have been identified, but there could be many more species.

LAND USE

- Nature conservation
- Agriculture
- Fishing

THREATS AND CONSERVATION ISSUES

- Aquaculture and fishing
- Encroachment for agriculture
- Grazing
- Poisoning of birds
- Disturbance to birds by humans
- Burning of grass

Illegal fishing is a major problem as locals use various methods in the sanctuary area for fishing. The herdsmen and fishermen also build small huts or camps (*khutis*) on the islets in the wetlands for their convenience, while fishing and grazing their livestock. Attempts by the Forest Department to remove the encroachments are undermined as the locals build the *khutis* again. The overgrowth of invasive species like Common Water Hyacinth *Eichhornia crassipes* and *Ipomoea* sp. has spread over a large part of the once inundated wetlands (Kasambe & Hazarika 2010).

In the past, Pani-Dihing attracted hunters from near and far. A bag of 50 birds a day was quite common. Fortunately, these mass killings have been checked, but some poaching still goes on. A few years ago, large-scale poison baiting with Furadon was done in Pani-Dihing, which drastically reduced the raptor population. Measures should be taken to enhance their population and to regenerate the diversity of bird species in the sanctuary.

KEY CONTRIBUTORS

Diptimanta Barooah, Anwaruddin Choudhury, Kulojyoti Lahkar, Raju Kasambe.

KEY REFERENCES

- Barooah, D. (1990) Panihiding Reserve Forest – Status and its Avifauna. *Newsletter for Birdwatchers* 30 (5-6): 7–8.
- Barooah, D. (1994) Birds of Panidihing. *Newsletter for Birdwatchers* 34(4): 83–86.
- Choudhury, A.U. (1988) Some rare ornithological records from Sibsagar, Assam. *Cheetal* 29(2): 3–9.
- Choudhury, A.U. (1991) Bird observations from Sibsagar District, Assam, India. *Forktail* 6: 35–42.
- Choudhury, A.U. (1993) Nesting colonies of Greater Adjutant Storks in Nagaon and Sibsagar districts of Assam. *Newsletter for Birdwatchers* 33: 47–48.
- Choudhury, A.U. (2003). My days in Pani-Dihing and other Sivasagar wetlands. *Pakhitirtha* (Souvenir Bird Festival). Sivasagar, India.
- Hume, A.O. (1888) The birds of Manipur, Assam, Sylhet and Cachar. *Stray Feathers* 11: 1–353.
- Kasambe, R. and Hazarika, A. (2010): A visit to the Pani-Dihing Bird Sanctuary, Assam (an IBA). *Mistnet*. 11(4): 15–16.

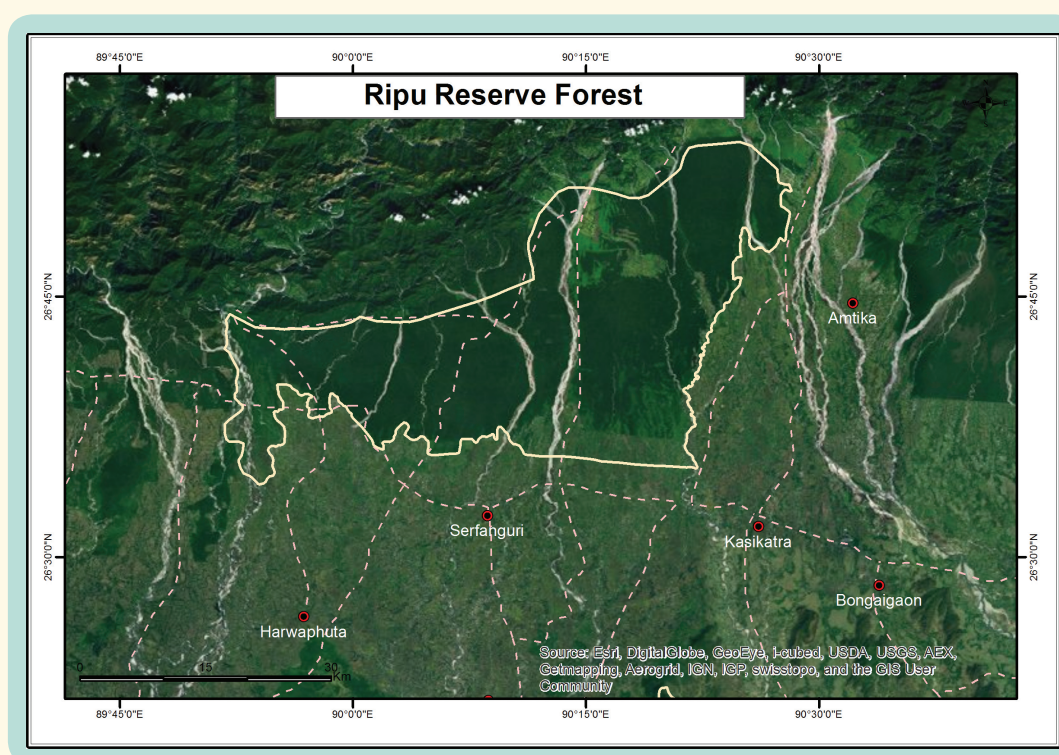
RIPU RESERVE FOREST

IN-AS-37

IBA Site Code	: IN-AS-37	Altitude	: 100–300 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–3,000 mm
District	: Kokrajhar	Temperature	: 6 °C to 30 °C
Coordinates	: 26° 47' 34" N, 90° 19' 60" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Semi-evergreen Forest, Tropical Moist Deciduous Forest
Area	: 50,000 ha		

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS : Protected as buffer zone of Manas Tiger Reserve.



GENERAL DESCRIPTION

Ripu and Chirang are two contiguous reserve forests in extreme western Assam, bordering West Bengal and Bhutan. They are also part of the buffer zone of Manas Tiger Reserve. The forests of Ripu and Chirang are contiguous with those of Buxa Tiger Reserve of West Bengal and Phipsoo Wildlife Sanctuary of Bhutan. Chirang is now being treated as a separate IBA. These forests have the largest known population of the Endangered Golden Langur *Trachypithecus geei* in India (Choudhury 2002). The total area of Ripu RF was 606 sq. km, but since 1989, almost 100 sq. km of this forest has been clearfelled and encroached upon due to insurgency-related problems. Hence, c. 500 sq. km remains as an IBA. Located in the northwestern part of Kokrajhar district, nestling in the foothills of the Bhutan Himalaya,

Ripu has some of the finest examples of *bhabar* forest, with *Sal Shorea robusta* as the dominant species. Further north, the forest is Semi-evergreen type. This reserve forest is easily accessible from Kokrajhar district headquarters, c. 45 km away. The terrain is largely flat or gently sloping from north to south, with some small hills towards the north. The main rivers that flow through this IBA are Sankosh, Hel, and Saralbhangra. Besides dense Tropical Semi-evergreen and Tropical Moist Deciduous forests, riverine forests with light woodland and grasslands are also found.

Ripu serves as a vital corridor linking Manas National Park in Assam with Buxa in West Bengal, and also the forests of Bhutan, especially important for Asiatic Elephant *Elephas maximus*. These forests are part of the Chirang-Ripu Elephant Reserve of Assam.

AVIFAUNA

No detailed study on the avifauna has been conducted, but preliminary surveys reveal 300 bird species (A.U. Choudhury, *pers. comm.* 2003). The site lies in Biome 9 (Indo-Chinese Tropical Moist Forest), but many species of Biome 7, Biome 8, and Biome 11 are also seen here, such as Pygmy Blue Flycatcher *Ficedula hodgsoni*, Grey-bellied Tesia *Tesia cyaniventer*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckooshrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, and White-throated Bulbul *Alophoixus flaveolus*. Lesser Necklaced Laughingthrush *Garrulax monileger*, Greater or Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, and Sultan Tit *Melanochlora sultanea* are typical Biome 9 species.

Twelve globally Threatened species are found in this forest. The current status of the Bengal Florican is not confirmed, but there are past records from just outside the southern end of the reserve forest (Choudhury 2006). It is likely to occur in the grasslands of Ripu, may be as a stray visitor. The presence of the Rufous-necked Hornbill *Aceros nipalensis* proves that the forest is still pristine, at least in parts. On the Bhutan side, this bird is still not uncommon in undisturbed forests. The reserve forest is a stronghold of the Near Threatened Great Pied Hornbill *Buceros bicornis*. There were sites just outside the southern part of Ripu from

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>
(past records just outside the RF)	

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Rufus-necked Hornbill	<i>Aceros nipalensis</i>
Hodgson's Bushchat	<i>Saxicola insignis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
(past records just outside the RF)	

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
(past records just outside the RF)	

where Black-breasted Parrotbill *Paradoxornis flavirostris* was collected in the past (Choudhury 2006).

OTHER KEY FAUNA

The major mammal species of Ripu RF is the Golden Langur *Trachypithecus geei*. Assamese Macaque *Macaca*



ANWARUDDIN CHOUDHURY

Ripu and Chirang Reserve Forests are part of the buffer zone of Manas Tiger Reserve. Chirang is now considered as a separate IBA

assamensis and Rhesus Macaque *M. mulatta* are also found, sometimes together. Six species of large and small cats are reported: Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Marbled Cat *Pardofelis marmorata*, Fishing Cat *Prionailurus viverrina*, and Golden Cat *Catopuma temminckii*. The Hispid Hare *Caprolagus hispidus* is another rare mammal found chiefly in the grasslands. Ripu Forest is rich in ungulates. Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Cheetal *A. axis*, Barking Deer *Muntiacus muntjak*, Indian Water Buffalo *Bubalus arnee* (= *bubalis*, occasional), and Gaur *Bos gaurus* share the habitat with Asiatic Elephant *Elephas maximus*, Asiatic Black Bear *Ursus thibetanus*, and Sloth Bear *Melursus ursinus*. Two species of Otter *Lutra lutra* and *Lutrogale perspicillata* are recorded in the rivers and streams. Chinese Pangolin *Manis pentadactyla*, Chinese Porcupine *Hystrix brachyura*, and Binturong *Arctictis binturong* are notable species of this IBA.

The reptile fauna is rich, with Indian Softshell Turtle *Aspideretes gangeticus*, Peacock Softshell Turtle *A. hurum*, Rock Python *Python molurus*, Russell's Viper *Daboia russelii*, Bengal Monitor *Varanus bengalensis*, Water Monitor *V. salvator*, and Tucktoo Gecko *Gekko gekko*. More than 100 species of butterflies have been recorded.

LAND USE

- Forest
- Agriculture (in encroachments and forest villages)

THREATS AND CONSERVATION ISSUES

- Illegal felling of trees
- Poaching
- Encroachment

These rich forests have been severely affected by social unrest since 1989. The unrest began with a demand for autonomy for local tribals, but it soon led to insurgency with attendant political and socioeconomic problems. Professional timber smugglers took full advantage of the situation and clearfelled large areas, especially Ripu RF. At present felling has been stopped, but the situation is still not under the total control of the Forest Department. Even now, the Forest Department staff is unable to patrol the remote areas of the IBA. Jamduar, on the banks of the Sankosh river near the tri-junction of Assam-Bengal-Bhutan, is a major tourist attraction for its scenic beauty.

KEY CONTRIBUTORS

Bablu Dey, Subhash Chanda, Arindam Brahma, Anwaruddin Choudhury, Rajan Islari.

KEY REFERENCES

- Choudhury, A.U. (2002) Golden Langur *Trachypithecus geei* threatened by habitat fragmentation. *Zoos' Print Journal* 17(2): 699–703.
- Choudhury, A.U. (2006) *Birds of Manas National Park*. Gibbon Books & The Rhino Foundation, Guwahati. 84 pp.

SIBSAGAR (SIVASAGAR) TANKS

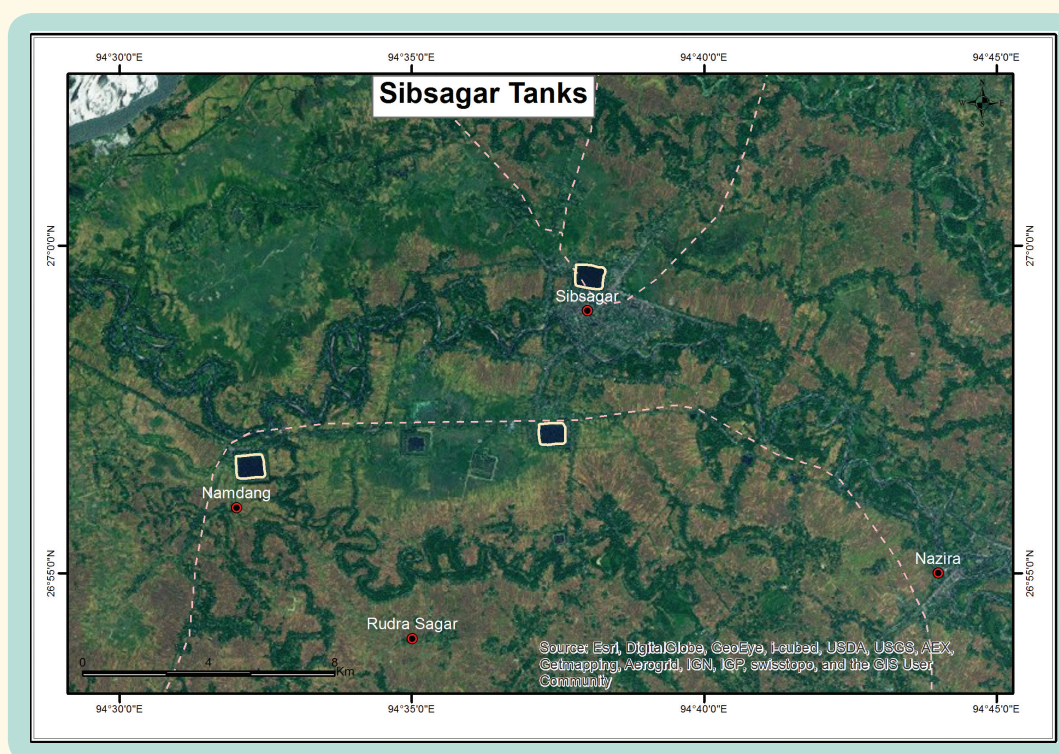
IN-AS-38

IBA Site Code	: IN-AS-38
Administrative Region (State)	: Assam
District	: Sibsagar (Sivasagar)
Coordinates	: 26° 58' 60" N, 94° 37' 60" E
Ownership	: Temple trusts, Community

Area	: 150 ha
Altitude	: 100 msl
Rainfall	: 2,500–3,500 mm
Temperature	: 7 °C to 35 °C
Biogeographic Zone	: Northeast
Habitats	: Freshwater Tanks

IBA CRITERIA : A1 (Threatened species), A4i (≥1% biogeographic population)

PROTECTION STATUS : Not officially protected, traditionally community protected.



GENERAL DESCRIPTION

This IBA site includes three large, historic tanks Joysagar (60 ha), Sibsagar (50 ha), and Gourisagar (40 ha) and their high banks, in and around Sibsagar town in eastern Assam. Since time immemorial, birds have been protected in these sacred temple tanks. Every winter, hundreds, often thousands, of ducks and geese spend the whole day resting and feeding in these tanks. The tanks are easily accessed by metalled roads. The surrounding terrain is flat plain country.

Sibsagar and Joysagar tanks are known for their spectacular flocks of ducks and geese. The largest wintering flocks of Bar-headed Goose *Anser indicus* and Greylag Goose *Anser anser* ever recorded in Assam were in Joysagar tank. About 5,800 Bar-headed and 3,000 Greylag were counted in 1995, according to Bibhab Talukdar, quoted in Choudhury (2000).

Most of the tanks are open water, but on the margins there is emergent and floating vegetation. Fortunately, these tanks are free from Water Hyacinth *Eichhornia crassipes*. Plant and tree species found here are *Albizia lucida*, *Bombax ceiba*, *Ziziphus jujuba*, *Ipomoea aquatica*, and *Imperata cylindrica* (Dutta & Konwar 2013).

AVIFAUNA

More than 60 species of birds have been recorded on the waterspread as well as in the trees on the banks. Lesser Adjutant *Leptoptilos javanicus* and Greater Adjutant *L. dubius* are seen in the trees growing around the tanks. Choudhury (1988) sighted seven Baer's Pochard *Aythya baeri* on Sibsagar tank, amongst thousands of other ducks. Great Crested Grebe *Podiceps cristatus* is seen in Sibsagar and Joysagar tanks, sometimes in hundreds. Before return

migration, they appear in breeding plumage and territorial display is seen.

Both the Bar-headed and Greylag Goose are present in large numbers, much above their 1% biogeographic population threshold, as recently determined by Wetlands International (2012). Between 52,000 to 60,000 Bar-headed Goose are estimated in the world, with 1% population threshold of 560. It is not uncommon to see 1,000–2,000 in these tanks. In 1995, a total of 5,800 were counted, which constitute about 10% of the population. Similarly, the South Asian non-breeding population of Greylag Goose *Anser anser rubirostris* is estimated to be 25,000 (Wetlands International 2012). A total of 3,000 found in these tanks in 1995 constitutes nearly 11% of this biogeographic population. Thus, this site easily qualifies for A4i criteria. More recent population figures are not available.

Although the Critically Endangered White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* are now rarely seen here, a small colony of the Endangered Greater Adjutant *Leptoptilos dubius* is still seen in Sibsagar district.

OTHER KEY FAUNA

As these tanks are surrounded by human habitation, no large wild mammal is present. Only Indian Smooth-coated Indian Otter *Lutrogale perspicillata* occasionally fish in the tanks, but they are now extremely rare. Among reptiles, Softshell Turtles *Nilssnia* spp. have been recorded.

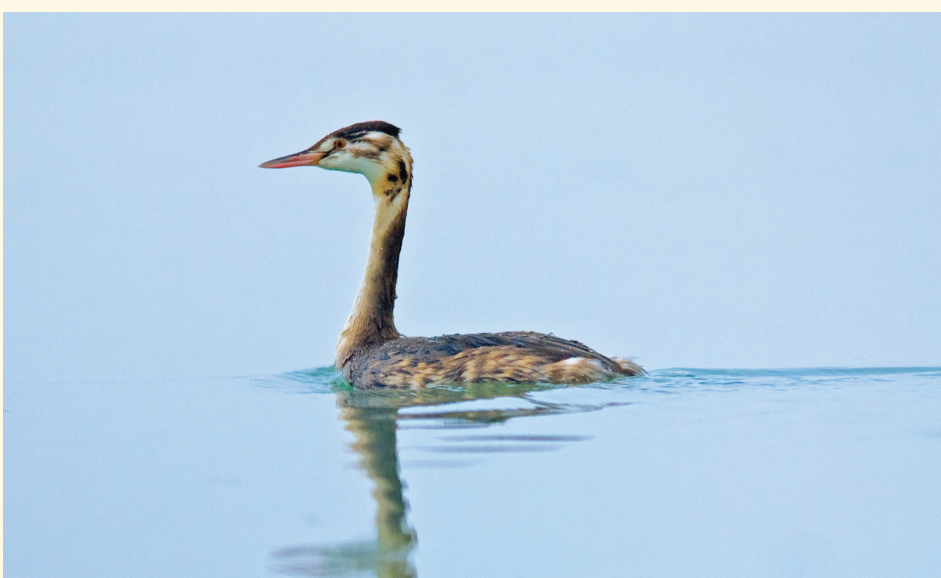
LAND USE

- Wetland
- Human habitation

THREATS AND CONSERVATION ISSUES

- Occasional poaching
- Increasing human activities
- Angling/Hunting turtles at night

Increasing human population and construction activities could be conservation concerns in future, but at present these do not appear to be a major problem. Nevertheless, the surrounding residents need to be motivated and awareness generated among them, that they are preserving a rich heritage. Occasional poaching has been reported, but it is not yet a serious matter. These tanks may also be declared



DHRITIMAN MUKHERJEE

Large numbers of Great Crested Grebe *Podiceps cristatus* are found in Sibsagar Tanks along with thousands of other waterbirds

CRITICALLY ENDANGERED

Baer's Pochard	<i>Aythya baeri</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Duck	<i>Aythya nyroca</i>

as Community Reserves under the amended Wildlife (Protection) Act. These tanks, which are present right in the middle of a city, provide a good opportunity to generate environmental awareness among students and an excellent area for birdwatching.

KEY CONTRIBUTORS

Diptimanta Barooh, Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Choudhury, A.U. (1988) Some rare ornithological records from Sibsagar, Assam. *Cheetal* 29(2): 3–9.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Dutta, P. and Konwar, M. (2013) Morphological aspects of floodplain wetlands with reference to upper Brahmaputra River valley. *International Journal of Scientific and Research Publications* 3(9): 1–6.
- Wetlands International (2012) *Waterbird Population Estimates – Fifth Edition*. Wetlands International Global Series No. 12. Wageningen, The Netherlands. (online version)

SON BEEL

IN-AS-39

IBA Site Code : IN-AS-39

Administrative Region (State) : Assam

District : Karimganj

Coordinates : 24° 40' 00" N,
92° 27' 00" E

Ownership : State, Private

Area : 1,500 ha

Altitude : 40 msl

Rainfall : >3,000 mm

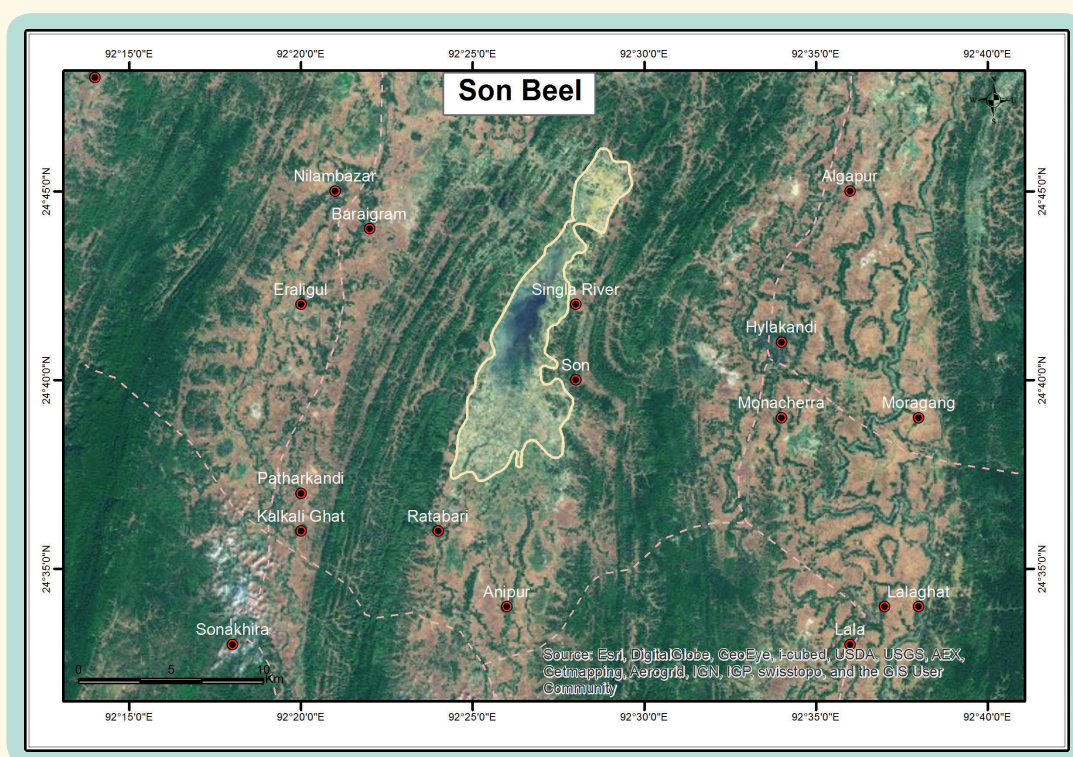
Temperature : 7 °C to 36 °C

Biogeographic Zone : Northeast

Habitats : Freshwater Lake

IBA CRITERIA : A1(Threatened species)

PROTECTION STATUS : Not officially protected, IBA in Danger.



GENERAL DESCRIPTION

Son Beel is a large tectonic lake in Karimganj district in southern Assam. It is flanked by hills on its west and east, and surrounded by 17 villages, mostly dominated by fishing communities. Its waterspread extends across 3,458 ha, but shrinks to 410 ha in winter (Kar *et al.* 2006). It is still the largest *beel* in Assam (Choudhury 2000), having a shoreline of 35.4 km, but is being reduced, and unfortunately, no effort is being made to save it. The Shingla river, originating in Mizoram, is its major inlet as well as outlet. Further downstream, there is another large lake known as Rata Beel, beyond which the Shingla river bifurcates into Kochua and Kakra rivers. Son Beel is accessible from Hailakandi and Karimganj towns.

A major outlet, River Kachua, traversing c. 19 km from

the northernmost end of the lake, eventually drains the lake water into a larger river called Kushiara (Kar 1990).

Barringtonia acutangula is the main tree species that grows in the *beel*, besides reeds such as *Typha* and various aquatic plants.

AVIFAUNA

Earlier, more than 150 species of birds were recorded (Anwaruddin Choudhury, *pers. comm.* 2003) but now the condition of the *beel* is pathetic. Both bird diversity and bird numbers have fallen. Himabrata Chakravarty (*pers. comm.* 2014) has recorded only c. 80 species of birds, and the earlier duck numbers are no longer seen. Lesser Whistling-duck *Dendrocygna javanica* is the only duck that is still seen in large numbers.



DHIRTIMAN MUKHERJEE

Son Beel is a large tectonic lake, where more than 150 species of birds have been recorded. It is under intense human pressure due to which the number of species has declined considerably

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>

NEAR THREATENED

Spot-billed Pelican (old records)	<i>Pelecanus philippensis</i>
-----------------------------------	-------------------------------

If properly managed, Son Beel has the potential to become a Ramsar Site, and could harbour more than 20,000 waterfowl. The Spot-billed Pelican *Pelecanus philippensis* and Greater Adjutant *Leptoptilos dubius* have stopped visiting the *beel*, though the Lesser Adjutant *Leptoptilos javanicus* is still seen. The last named species often appears in fair numbers. Up to 12 were recorded in recent years (Aamir Sohail Choudhury, *pers. comm.*), and 17 individuals were recorded on November 18, 2013 (Himabrata Chakravarty, *pers. comm.* 2014). Brahminy Kite *Haliastur indus*, which is fast disappearing from the wetlands of Assam, is still seen regularly.

OTHER KEY FAUNA

Not much work has been done on mammals, reptiles, and amphibians of this important wetland. What we do know is that two species of Otter (*Lutra lutra* and *Lutrogale perspicillata*) are found. There are records of Fishing Cat *Prionailurus viverrina*, but Hog Deer *Axis porcinus* has been extirpated.

Seventy species of fishes belonging to 49 genera under 24 families and 11 orders have been recorded (Kar *et al.* 2006).

LAND USE

- Wetland
- Agriculture

THREATS AND CONSERVATION ISSUES

- Reclamation and paddy cultivation
- Siltation
- Excessive fishing
- Poaching of birds

The entire area has been silted up and reclaimed to a great extent. Winter paddy is widely grown, and that again has threatened the *beel* by accelerating reclamation and siltation. Excessive fishing activities disturb the wetland biodiversity. More than 30 diesel-fuelled motorboats are operated during the monsoon as a means of transport. Trapping of birds is also done on a large scale.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Aamir Sohail Choudhury, Hilloljyoti Singha, Himabrata Chakravarty.

KEY REFERENCES

- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books and WWF-India NE Region, Guwahati. Pp. 240.
- Kar, D. (1990) Limnology and fisheries of Lake Sone in the Cachar district of Assam (India). *Matsya* 15-16: 209–213.
- Kar, D., Nagarathna, A.V., Ramachandra, T.V., and Dey, S.C. (2006) Fish diversity and conservation aspects in an aquatic ecosystem in northeastern India. *Zoos' Print Journal* 21(7): 2308–2315.

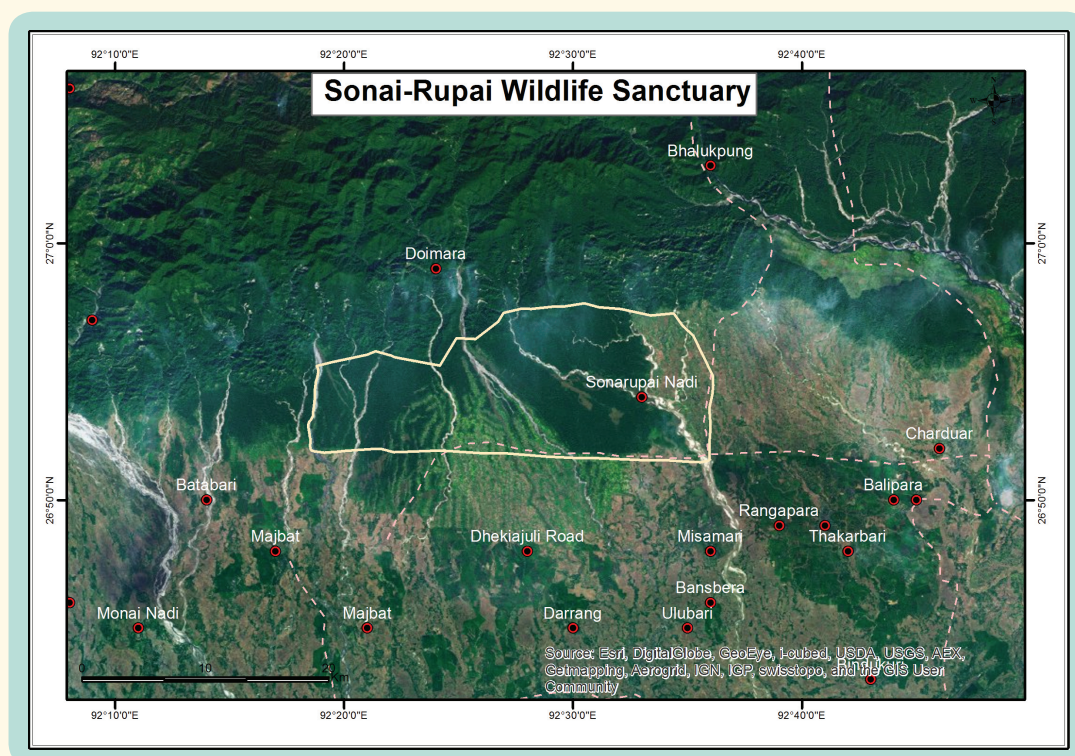
SONAI-RUPAI WILDLIFE SANCTUARY

IN-AS-40

IBA Site Code	: IN-AS-40	Altitude	: 100–300 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–2,800 mm
District	: Sonitpur	Temperature	: 7 °C to 35 °C
Coordinates	: 26° 55' 11" N, 92° 34' 32" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Dry Evergreen, Tropical Semi-evergreen, and Tropical Moist Deciduous Forests, Tropical Grassland
Area	: 22,000 ha		

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Wildlife Sanctuary, established 1998.



GENERAL DESCRIPTION

Sonai-Rupai was declared as a Game Reserve in 1934, because of its rich biodiversity that included the Indian One-horned Rhinoceros *Rhinoceros unicornis*, and reported populations of Wild Buffalo *Bubalus arnee* (= *bubalis*). Both these species are, however, locally extinct from this sanctuary. Located c. 40 km northwest of Tezpur town in Sonitpur district, northern Assam, Sonai-Rupai has a number of globally Threatened birds that received little attention earlier. These are White-winged Duck *Asarcornis scutulata*, Bengal Florican *Houbaropsis bengalensis*, Swamp Francolin *Francolinus gularis*, and the occasional Rufous-necked Hornbill *Aceros nipalensis* (Choudhury 2000, 2002).

Sonai-Rupai WLS is located on the interstate border with Arunachal Pradesh. It was earlier part of Charduar Reserve Forest. The Gabharu, Gelgeli, Sonai, and Rupai rivers flow through the sanctuary. An added advantage is the presence of Doimara RF, and beyond this, Eaglenest Wildlife Sanctuary across the state border in Arunachal Pradesh, covering about 50,000 ha. For many species of fauna, it is one large wilderness area.

The terrain in Sonai-Rupai is flat and gently sloping towards the south, typical of *bhabar* and *terai* areas. Towards the north, promontories of the small hills of Arunachal Himalaya can be seen. Most of the Sonai-Rupai IBA is forested, but there are also large patches of grassland.

DHRITIMAN MUKHERJEE



The northern part of Sonai Rupai is contiguous with the forests of Arunachal Pradesh. On the southern part, some grasslands are still present, but they are under tremendous human pressure

AVIFAUNA

Preliminary surveys reveal about 160 species of birds, but detailed studies could yield more than 250 (A.U. Choudhury, pers. comm. 2002). During the late 1980s, Rahmani *et al.* (1990) did surveys in search of the Bengal Florican. They could not sight the Bengal Florican, but found that nearly 200 ha of the Gelgeli grassland in this IBA is one of the best grasslands of its kind and quite suitable for the florican. The vegetation compares well with other ideal florican habitats in Manas, Orang, and Kaziranga. Choudhury (2002) could not find the Bengal Florican either, but says “perhaps a few birds remain”. A thorough survey is required to prove the absence or presence of this rare bird.

As the forest of Sonai-Rupai is continuous with Doimara Reserve Forest and then Eaglenest Wildlife Sanctuary in Arunachal Pradesh, the birdlife is extremely rich. Rufous-necked Hornbill *Aceros nipalensis* can be seen, along with forest species such as Grey Peacock-pheasant *Polyplectron*

bicalcaratum, Himalayan Flameblack *Dinopium shorii*, Slaty Blue Flycatcher *Ficedula tricolor*, Maroon Oriole *Oriolus traillii*, Black-winged Cuckooshrike *Coracina melaschistos*, Small Niltava *Niltava macgrigoriae*, Black-backed Forktail *Enicurus immaculatus*, Slaty-backed Forktail *E. schistaceus*, Sultan Tit *Melanochlora sultanea*, White-throated Bulbul *Alophoixus flaveolus*, Slaty-bellied Tesia *Tesia olivea*, Lesser Necklaced Laughingthrush *Garrulax moniliger*, Greater Necklaced Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, Black-throated Sunbird *Aethopyga saturata*, and Streaked Spiderhunter *Arachnothera magna*.

Detailed investigations on the birdlife have not been done in this site, so we do not know much about its restricted-range species. The site lies at the interface of the Indo-Gangetic Plains (Biome 12) and Indo-Chinese Tropical Moist Forest (Biome 9), and at the edge of Eastern Himalaya Endemic Bird Area (EBA 130: Stattersfield *et al.* 1998), so it is likely that many more species of conservation concern are found here. Presently, we have included this site only due to the presence of Threatened species (A1) criteria.

OTHER KEY FAUNA

Sonai-Rupai Wildlife Sanctuary has all the major mammal fauna present in Evergreen, Semi-evergreen, and Moist Deciduous forests of Assam. Its continuity with the extensive forests of Arunachal Pradesh has enhanced its mammalian and avian diversity. It harbours the big four, i.e.

CRITICALLY ENDANGERED	
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Bengal Florican (?)	<i>Houbaropsis bengalensis</i>
ENDANGERED	
White-winged Duck	<i>Asarcornis scutulata</i>
VULNERABLE	
Swamp Francolin	<i>Francolinus gularis</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>

Asiatic Elephant *Elephas maximus*, Tiger *Panthera tigris*, Leopard *P. pardus*, and Gaur *Bos gaurus*. Only One-horned Rhinoceros and Wild Water Buffalo are missing, although they once existed (Choudhury 2013). Among primates, it has Slow Loris *Nycticebus bengalensis*, Assamese Macaque *Macaca assamensis*, and Rhesus Macaque *M. mulatta*. The smaller carnivores are Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Jackal *Canis aureus*, Large Indian Civet *Viverra zibetha*, and Small Indian Civet *Viverricula indica*. Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, and Barking Deer *Muntiacus muntjak* are found in this IBA.

The reptiles and amphibians of Sonai-Rupai are not well recorded.

LAND USE

- Forest
- Grassland
- Riverine wetland

THREATS AND CONSERVATION ISSUES

- Politically organized encroachment
- Felling of trees
- Grazing
- Illegal fishing
- Occasional poaching

Sonai-Rupai Wildlife Sanctuary has not received the kind of attention that such a valuable wilderness area deserves. It has all the potential to become one of the most important sanctuaries of northeast India. If Gelgeli grassland is protected and managed, the Bengal Florican would perhaps return. It can also serve as one of the reintroduction sites for the Critically Endangered Pygmy Hog *Sus salvanius* (= *Porcula salvania*). This site is under grave threat from

encroachers who have already cleared the adjacent Balipara and Charduar Reserve Forests. Already, a part has been encroached since the early 1990s. Even the slightest opportunity given to the encroachers, due to slackness in administration, may put the entire sanctuary in jeopardy. Already, a third of the sanctuary has been encroached during the last 15 years. Hence, the site is in need of high conservation attention. The problem has been aggravated by insurgency, as well as a plan to convert some of the open areas into a firing range. Such plans should be dropped once and for all.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Goutam Narayan, Asad R. Rahmani.

REFERENCES

- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2002) Conservation of the White-winged Wood Duck *Cairina scutulata* in India. Pp. 52–64. In: Rahmani, A.R. and Ugra, Gayatri (Eds) *Birds of Wetlands and Grasslands: Proceedings of the Sálim Ali Centenary Seminar on conservation of avifauna of wetlands and grasslands*. Bombay Natural History Society, Mumbai. Pp. x + 228.
- Choudhury, A.U. (2013) *The Mammals of North East India*. Gibbon Books & The Rhino Foundation with support from COA, Taiwan, Guwahati. 432 pp.
- Rahmani, A.R., Narayan, G., Rosalind, L., and Sankaran, R. (1990) Status of the Bengal Florican in India. Pp. 55–78. In: Status and Ecology of the Lesser and Bengal Floricans, with reports on Jerdon's Courser and Mountain Quail. Final Report. Bombay Natural History Society, Bombay.
- Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK. Pp. 846.

SUBANSIRI-DULUNG

IN-AS-41

IBA Site Code : IN-AS-41

Administrative Region : Assam

(State)

District : Dhemaji, Lakhimpur

Coordinates : 27° 33' 30" N, 94° 17' 30" E

Ownership : State

Area : 451 ha

Altitude : 100–1,000 msl

Rainfall : 2,000–5,000 mm

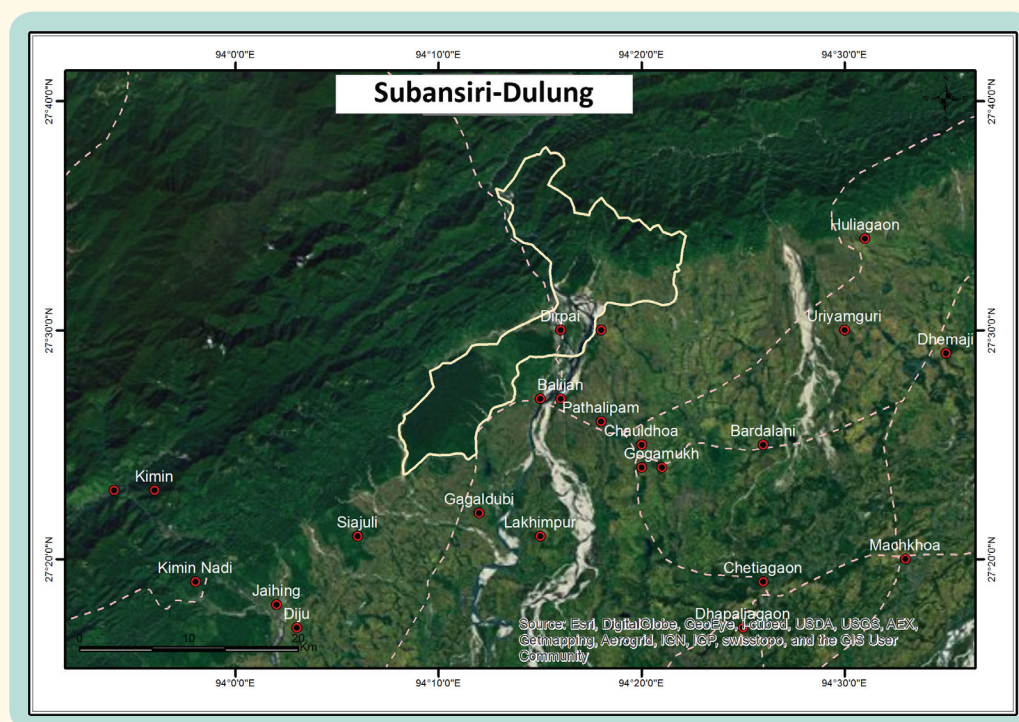
Temperature : 6 °C to 34 °C

Biogeographic Zone : Northeast

Habitats : Tropical Dry Evergreen Forest,
Tropical Semi-evergreen Forest,
Riverine Vegetation

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

This site includes two reserve forests, Subansiri in Dhemaji district and Dulung in Lakhimpur district, in northeastern Assam. River Subansiri passes through the middle of the IBA, while its tributaries Pavo, Geruka, Dirpai, and Dulung drain other parts of the site. It is here that the Subansiri river debouches into the plains, forming a broad braided stretch of aquatic and terrestrial habitats.

The terrain is hilly, as it covers the foothills of the Eastern Himalaya. Small flat areas occur along the southern part. The higher parts of Subansiri Reserve Forest rise above 1,000 msl.

The site is known for wildlife, especially Asiatic Elephant *Elephas maximus*, and birds. There was an excellent patch of *terai* grassland in Dirpai area

of Subansiri RF, where Bengal Florican *Houbaropsis bengalensis* and Swamp Francolin *Francolinus gularis* used to occur. While the call of the francolins was heard till a decade ago, the florican was extirpated during the early years of this century, mainly due to encroachment and settlements in its grassland habitat. There is also a record of the Chestnut-breasted or Red-breasted Hill-prtridge *Arborophila mandellii* from the higher areas of Subansiri RF (Choudhury 2000).

The entire area is clothed with lush Tropical Evergreen and Semi-evergreen Forest, with absolute habitat contiguity with Talle Valley WLS (another IBA) of Arunachal Pradesh. The medicinal plant *Sia Nahor Kayea assamica* is found here, therefore the site has tremendous botanical value.

DHRITIMAN MUKHERJEE



Tropical wet evergreen, tropical semi-evergreen, and riverine forests are present in Subansiri-Dulung where more than 200 bird species have been identified till now, but more are likely to occur

AVIFAUNA

Subansiri is an extremely important habitat for birdlife. More than 200 bird species have been identified, some of them rare (A.U. Choudhury, *pers. comm.* 2003). This site represents Biome 9 (Indo-Chinese Tropical Moist Forest), but birds of other biomes (5, 7, 8, 11, and 12) are also found here, some species only in winter. Some of the important species recorded are Himalayan Griffon *Gyps himalayensis*, Rufous-breasted Blue Flycatcher *Ficedula hodgsonii*, Slaty Blue Flycatcher *F. tricolor*, Ferruginous Flycatcher *Muscicapa ferruginea*, Chestnut-headed Tesia *Tesia castaneocoronata*, Grey-bellied Tesia *T. cyaniventer*, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckooshrike *Coracina melaschistos*, White-throated Bulbul *Alophoixus flaveolus*, Black Bulbul *Hypsipetes leucocephalus*, Grey-winged Blackbird *Turdus bouboul*, Redheaded Babbler *Stachyris ruficeps*, Himalayan Flameback *Dinopium shorii*, Lesser Necklaced Laughingthrush *Garrulax monileger*, Black-gorgeted Laughingthrush *G. pectoralis*, and Rufous-necked Laughingthrush *G. ruficollis*.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Bengal Florican (no recent record)	<i>Houbaropsis bengalensis</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Swamp Francolin (?)	<i>Francolinus gularis</i>
Red-breasted Hill-partridge	<i>Arborophila mandellii</i>
(no recent report)	
Rufous-necked Hornbill	<i>Aceros nipalensis</i>

ENDEMIC BIRD AREA 130: EASTERN HIMALAYA

Red-breasted Hill-partridge	<i>Arborophila mandellii</i>
(no recent report)	

OTHER KEY FAUNA

Subansiri Reserve Forest has most of the major mammal species found in Tropical Evergreen and Semi-evergreen forests of Assam. It has four species of primates, namely

Slow Loris *Nycticebus bengalensis*, Capped Langur *Trachypithecus pileatus*, Assamese Macaque *Macaca assamensis*, and Rhesus Macaque *M. mulatta*. Asiatic Black Bear *Ursus thibetanus* is mainly confined to higher altitudes. In the steamy jungles and tall grasslands, there was Tiger *Panthera tigris*, which is almost extirpated, but the Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, and Marbled Cat *Pardofelis marmorata* still occur (Choudhury 1996). Ungulates recorded are Gaur *Bos gaurus*, Himalayan Serow *Capricornis thar*, Sambar *Rusa unicolor*, and Barking Deer *Muntiacus muntjak*. Malayan Giant Squirrel *Ratufa bicolor* is quite common in closed canopy forest. The Ganges River Dolphin *Platanista gangetica* is usually seen in the monsoon, while Common Otter *Lutra lutra* and Indian Smooth-coated Otter *Lutrogale perspicillata* are found throughout the year in undisturbed streams and rivers.

LAND USE

- Forest

THREATS AND CONSERVATION ISSUES

- Environmental impact of the Lower Subansiri Hydroelectric Project
- Encroachment
- Illegal felling of trees
- Poaching
- Grazing

India's largest hydroelectric project (the Siang project is yet to be commissioned) is being constructed here. Known as the Lower Subansiri Hydroelectric Project, its installed capacity will be 2,000 MW. This is the most significant conservation issue that will affect the site. The central and state governments have laid down certain conditions to minimize the damage to the biodiversity of the site. One of the conditions laid down by the Government of India is the declaration of adjacent forests as wildlife sanctuaries or national parks. Therefore, this IBA site may soon get sanctuary status.

Owing to the very high biodiversity value of this proposed IBA, it is vital that a detailed bio-habitat analysis should be

undertaken by a reputed organization like BNHS, before any decision can be taken with regard to the Lower Subansiri Hydroelectric Project. Such studies would need to focus on the presence and the likely impact on rare and endangered species of plants and animals, and also on the impacts on account of loss of riverine habitats such as sand banks, rivulets, denning and nesting sites, and breeding grounds of aquatic fauna. A special study is required to assess the impact of the dam, reservoir, and its infrastructure, such as labour and housing colonies on the migration route of elephants (Sahgal & Sharma 2002).

According to the National Hydroelectric Power Corporation (NHPC), only 42 ha of Talle Valley WLS would be submerged by the reservoir. The fact is that the proposed reservoir would submerge large primary forests of Talle RF and Panir RF in Arunachal Pradesh, and Subansiri RF in Assam. These are vital forests for a large number of endangered species protected under the Indian Wildlife (Protection) Act (Choudhury 2002, Vaghlikar & Ahmed 2003). The proposed submergence extends approximately 75 km upstream. Therefore, the impact on areas outside Talle WLS, including corridors and riverine patches, is likely to be as severe as the damage to the sanctuary itself.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Neeraj Vaghlikar, Manju Menon.

KEY REFERENCES

- Choudhury, A.U. (1996) The marbled cat *Felis marmorata* Martin in Assam – some recent records. *JBNS* 93(3): 583–584.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2002) Comments on the Environmental Impact Assessment (EIA) of Kameng and Lower Subansiri Hydroelectric Projects, Arunachal Pradesh and Assam. Pp. 8 + maps.
- Sahgal, B. and Sharma, S.C. (2002) Lower Subansiri Site Visit. Report submitted to Government of India, New Delhi. Pp. 22.
- Vaghlikar, N. and Ahmed, M.F. (2003) Tracking a hydel project – the story of Lower Subansiri. *The Ecologist Asia* 11(1): 25–32.

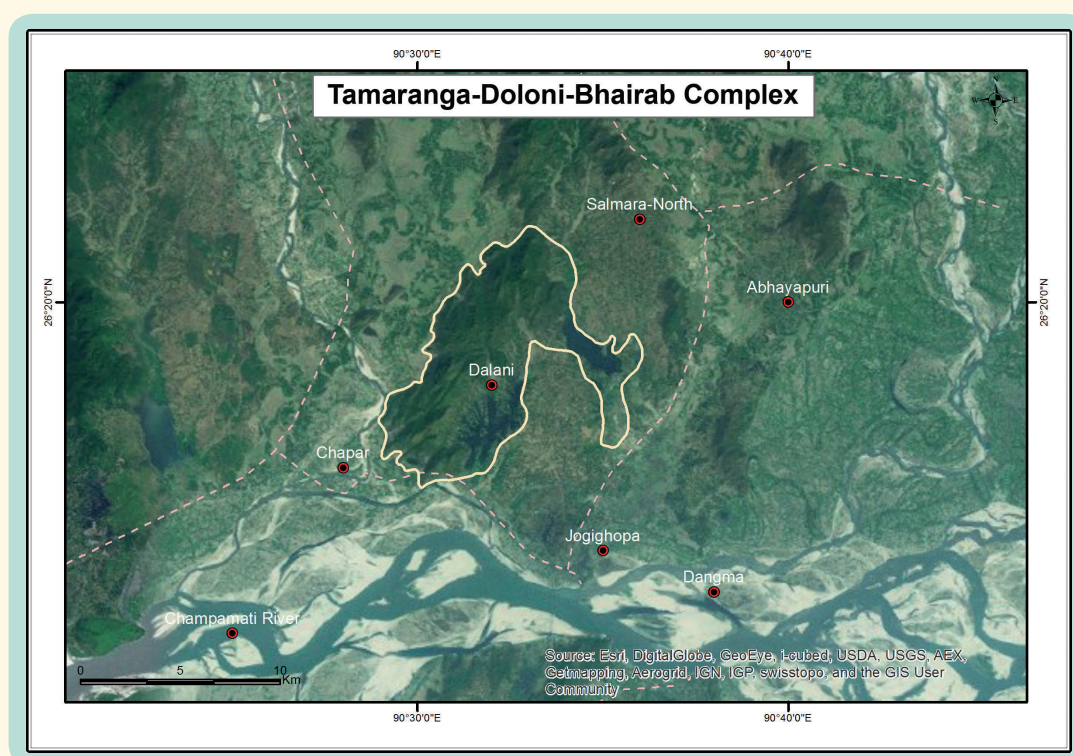
TAMRANGA-DOLONI-BHAIRAB COMPLEX

IN-AS-42

IBA Site Code	: IN-AS-42	Altitude	: 30–499 msl
Administrative Region (State)	: Assam	Rainfall	: 2,000–3,000 mm
District	: Bongaigaon	Temperature	: 7 °C to 35 °C
Coordinates	: 26° 15' 00" N, 90° 30' 00" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Freshwater Swamp, Lake, Tropical Moist Deciduous Forest, Tropical Bamboo Brakes
Area	: 4,600 ha		

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Not officially protected, IBA in Danger.



GENERAL DESCRIPTION

Tamaranga-Doloni-Bhairab Complex includes the wetlands of Tamaranga, Konora, Paropota, and Doloni, and an isolated hill, Bhairab Pahar beside Doloni Lake, in western Assam. Bhairab Pahar or Mahadev hill is situated on the banks of Tamaranga Beel. Bhairab Pahar has been proposed as a reserve forest. The area comprises these four wetlands, totalling more than 1,000 ha, and one proposed reserve forest of c. 3,605 ha. This IBA is situated only 30 km from Bongaigaon town, the district headquarters, 25 km off National Highway-31. The *beels* (wetlands) are leased out by the State Government for fishing. The proposed reserve forest is a rocky hillock, part of an Archaean plateau, covered with degraded Moist Deciduous Forest and Bamboo brakes.

Tamaranga and Doloni are large *beels* that attract many migratory birds, including some rare ones. They are also good breeding grounds for resident waterbirds. Bhairab Pahar hill is surrounded by settlements of the Rabha tribe, who have been involved in a Joint Forest Management scheme by the Forest Department to protect biodiversity. At the base of Bhairab Pahar is the village Shankarghola, which has been recognized as a Community Conserved Area. There is great scope to promote the entire area for ecotourism. In this regard, the district administration had initiated a project named Bihanga Vihar, but later abandoned it and nothing was done. Only the local people and NGOs have taken up the issue of making this place a tourist attraction.



This IBA is a large complex of lakes, many of them joining during the monsoon. Earlier, more than 20,000 waterfowl used to be found, but now it is highly disturbed. We consider this site as an IBA in Danger

The wetlands are covered with Water Hyacinth *Eichhornia crassipes* in some parts, but the major part of Doloni and Tamranga is open water, facilitating the movement of migratory waterfowl. Wherever this pernicious weed is not found, submerged and emergent plants can be seen. The surrounding forest is Tropical Moist Deciduous, dominated by Sal *Shorea robusta*.

AVIFAUNA

A decade ago, more than 150 bird species were known to occur here, some waterfowl in thousands, but now the situation is very different. The *beel* is highly disturbed by

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture (?)	<i>Gyps tenuirostris</i>
Baer's Pochard	<i>Aythya baeri</i>

ENDANGERED

Greater Adjutant (?)	<i>Leptoptilos dubius</i>
----------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Ferruginous Pochard	<i>Aythya nyroca</i>
Himalayan Griffon	<i>Gyps himalayensis</i>

humans. Both species of Adjutants used to be seen here, but Greater Adjutant *Leptoptilos dubius* has not been seen for a decade now. The site no longer holds more than 20,000 waterfowl in winter, so at present it does not qualify for A4iii criteria ($\geq 20,000$ waterbirds). The IBA still harbours Threatened species such as Baer's Pochard *Aythya baeri*, so it fits A1 criteria. We consider it as an IBA in Danger.

OTHER KEY FAUNA

Other fauna of the site include mammals such as the Golden Langur *Trachypithecus geei* (Choudhury 2002), Rhesus Macaque *Macaca mulatta*, Wild Boar *Sus scrofa*, Leopard *Panthera pardus*, Chinese Pangolin *Manis pentadactyla*, Barking Deer *Muntiacus muntjak*, and a small herd of Gaur *Bos gaurus*. Reptiles such as the Elongated Turtle *Indotestudo elongata* have been recorded on Bhairab Pahar, while various softshell turtles occur in the *beels*. Rock Python *Python molurus* and Bengal Monitor *Varanus bengalensis* have also been recorded.

LAND USE

- Wetland
- Forest
- Agriculture

THREATS AND CONSERVATION ISSUES

- Extensive fishing
- Agriculture
- Reclamation
- Siltation
- Poaching and hunting
- Collection of firewood
- Encroachment
- Grazing
- Cutting of trees and bamboo

Bhairab Pahar is already degraded, although it has an important population of the Golden Langur and of Gaur. The wetlands are being over-exploited. Uncontrolled fishing and spread of Water Hyacinth are the major problems for birds. With duly enforced conservation measures, these wetlands could become a paradise for waterbirds. Detailed investigation of birdlife is urgently required. This site should also be included in the annual waterfowl census. Nature awareness campaigns should be started in the surrounding villages and schools.

KEY CONTRIBUTORS

Hilloljyoti Singha, Kulojyoti Lahkar, Arnab Bose, Sadashib Nath Sen.

KEY REFERENCES

Choudhury, A.U. (2002) Golden langur *Trachypithecus geei* threatened by habitat fragmentation. *Zoos' Print Journal* 17(2): 699–703.

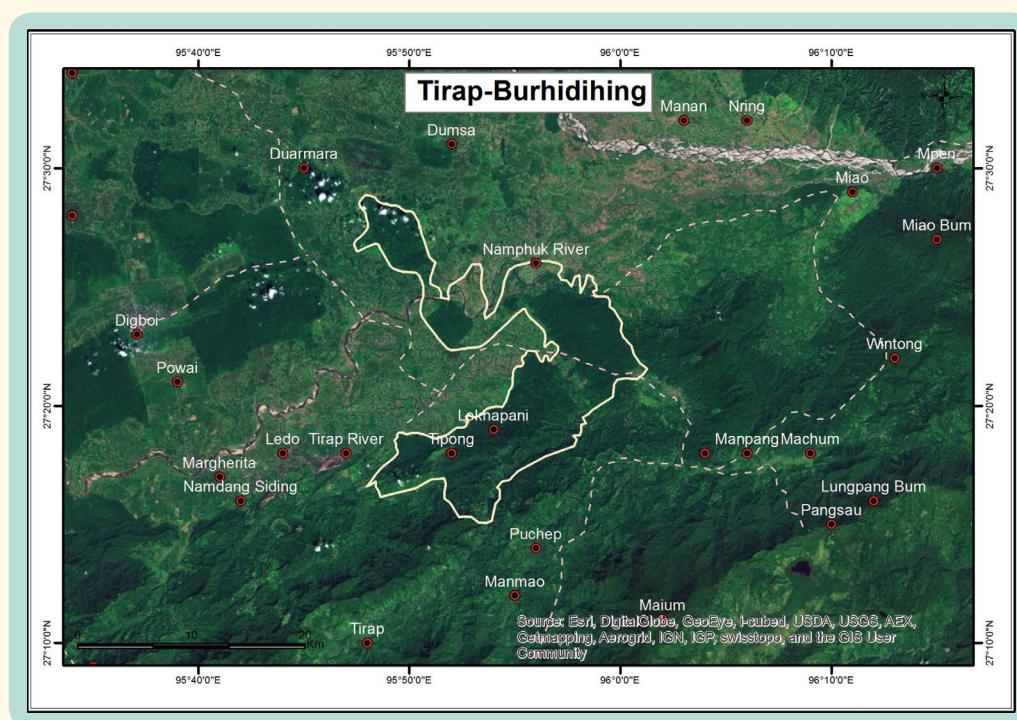
TIRAP-BURHIDIHING

IN-AS-43

IBA Site Code	: IN-AS-43	Altitude	: 100–250 msl
Administrative Region (State)	: Assam	Rainfall	: 2,500–4,000 mm
District	: Tinsukia	Temperature	: 7 °C to 32 °C
Coordinates	: 27° 20' 00" N, 95° 50' 60" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Semi-evergreen Forest, Tropical Wet Evergreen Forest
Area	: 15,450 ha		

IBA CRITERIA: A1 (Threatened species)

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

This IBA site in extreme eastern Assam includes seven reserve forests and two proposed reserve forests. The reserve forests are Burhidihing North and South Block (2,295 ha), Kotha (1,130 ha), Namphai (2,100 ha), Tinkopani (3,030 ha), Tirap (1,454 ha), Tipong (445 ha), and additions to Tirap and Tipong (4,995 ha). The proposed reserve forests are located on the plains along the Burhidihing river, while the other areas cover the foothills of Patkai range.

All these areas bear tropical rainforest and are known strongholds of the Endangered White-winged Duck *Asarcornis scutulata* (Choudhury 1996a, 1998). The Masked Finfoot *Heliopais personatus* has been reported (Choudhury 1997). These forests are also rich in primates and other wildlife.

A national highway and other roads pass through the

area, making it accessible to a great extent. The approach to Namdapha National Park in Arunachal Pradesh is through this area, and the habitat is still contiguous.

The vegetation of the site is mainly Tropical Wet Evergreen type, with *Dipterocarpus macrocarpus*, *Shorea assamica*, *Terminalia myriocarpa*, *Artocarpus chaplasha*, *Dillenia indica*, and *Ficus* spp. dominating. The important grasses are *Arundo donax*, *Phragmites karka*, *Imperata cylindrica*, and *Saccharum* spp., found along riverbanks and in depressions.

AVIFAUNA

Except for surveys by Choudhury (1996a, 1998) in search of White-winged Duck, not much work has been done on avifauna in this area. This site is extremely rich in birds, especially hornbills, pheasants, and other forest birds. Most

of the Indian bird species of Biome 9 (Indo-Chinese Tropical Moist Forest) are likely to be found in this IBA, besides species of Biomes 5, 7, 8, and 11 in winter. The important biome species are Grey Peacock-pheasant *Polyplectron bicalcaratum*, Mountain Bamboo-partridge *Bambusicola fytchii*, Masked Finfoot *Heliopais personatus*, Himalayan Flameback or Golden-backed Woodpecker *Dinopium shorii*, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Austen's Brown Hornbill *Anorrhinus austeni*, Greater Necklaced Laughingthrush *Garrulax pectoralis*, Himalayan Treepie *Dendrocitta formosae*, White-throated Bulbul *Alophoixus flaveolus*, Rufous-bellied Niltava *Niltava sundara*, and Nepal Fulvetta *Alcippe nipalensis*.

Detailed investigation on the birdlife is required. Presently, we do not have information on the restricted-range species, if any, found here. Similarly, information on biome-restricted assemblages is lacking. As the forest is largely intact, this site is extremely important for the protection of many forest birds.

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
Masked Finfoot (?)	<i>Heliopais personatus</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

NEAR THREATENED

Great Pied Hornbill	<i>Buceros bicornis</i>
Austen's Brown Hornbill	<i>Anorrhinus austeni</i>

OTHER KEY FAUNA

Tirap-Burhidihing IBA is rich in mammalian, reptilian, and amphibian species. Six species of primates are found: Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Pig-tailed Macaque *Macaca nemestrina*, Stump-tailed Macaque *M. arctoides*, Rhesus Macaque *M. mulatta*, and Slow Loris *Nycticebus bengalensis* (Choudhury 1996b). The site is known for its large herds of Asiatic Elephant *Elephas maximus*. Major carnivores are Tiger *Panthera tigris* (occasional), Leopard *P. pardus*, and Wild Dog *Cuon alpinus*. Asiatic Black Bear *Ursus thibetanus* is also reported. Malayan Giant Squirrel *Ratufa bicolor* and Common Giant Flying Squirrel *Petaurista petaurista* live

in the closed canopy forest areas. Sambar *Rusa unicolor* and Barking Deer *Muntiacus muntjak*, as well as Gaur *Bos gaurus* are the major herbivores.

LAND USE

- Forest
- Agriculture

THREATS AND CONSERVATION ISSUES

- Illegal felling of trees
- Encroachment
- Fishing
- Opportunistic capture of White-winged ducklings and collection of eggs
- Poaching
- Coal mining in the vicinity

Encroachment has been a major issue in Kotha and Namphai areas. Most of the former forest is already under the plough. Fishing in the jungle pools that are habitats of the Endangered White-winged Duck, and illegal felling are the other main issues. Open-cast coal mining just outside the site is a major environmental issue for this part of Assam. Namphai Reserve Forest was recommended as a sanctuary (Choudhury 1996a), but the proposal is still pending with the government.

Lowland tropical rain forest has mostly disappeared from Assam (and other parts of India), therefore, protection of this site is crucial, not only for Threatened birds but also for many mammals and reptiles included in the Indian Wildlife (Protection) Act, 1972.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Choudhury, A.U. (1996a) Survey of the White-winged Wood Duck and the Bengal Florican in Tinsukia district and adjacent areas of Assam and Arunachal Pradesh. The Rhino Foundation for nature in NE India, Guwahati.
- Choudhury, A.U. (1996b) Survey of primates in some parts of eastern and central Assam. Final report to ASTEC (Assam Science Technology & Environment Council), Guwahati. Pp. 32.
- Choudhury, A.U. (1997) Current status of the Masked Finfoot in India. *Newsletter for Birdwatchers* 37(5): 90–91.
- Choudhury, A.U. (1998) Status and conservation of the White-winged Duck in eastern Assam, India. *OBC Bulletin* 28: 14–17.

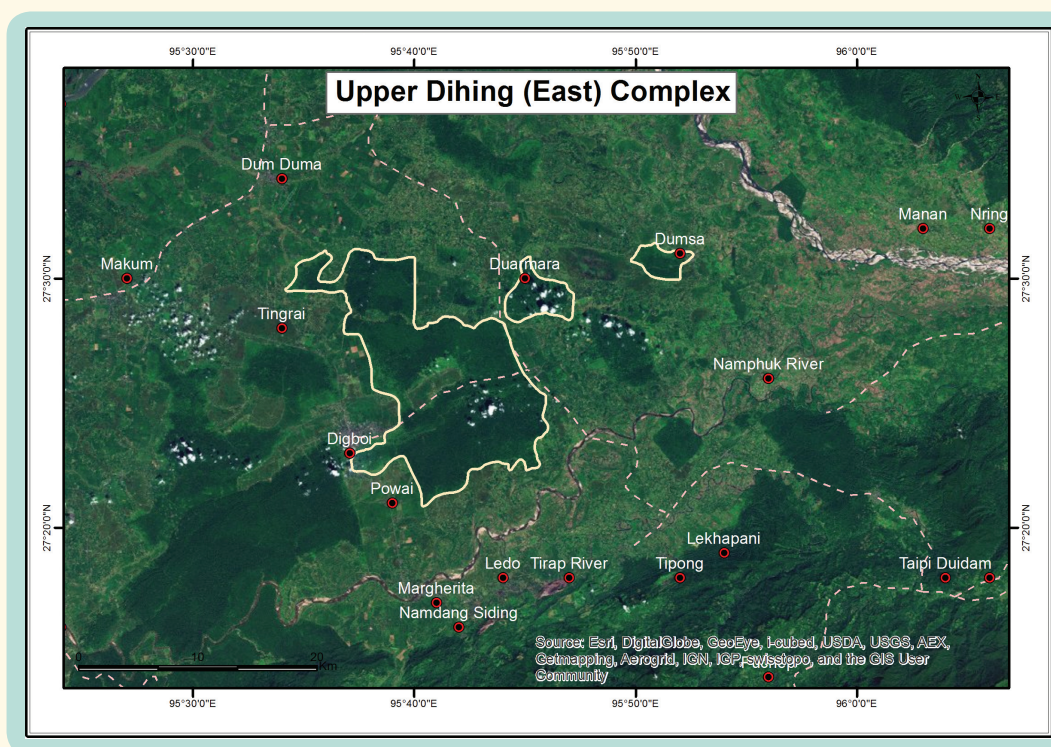
UPPER DIHING (EAST) COMPLEX

IN-AS-44

IBA Site Code	: IN-AS-44	Area	: 19,200 ha
Administrative Region (State)	: Assam	Altitude	: 120–200 msl
District	: Tinsukia	Rainfall	: 3,000–3,700 mm
Coordinates	: 27° 23' 60" N, 95° 37' 30" E	Temperature	: 7 °C to 32 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Tropical Wet Evergreen Forest

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya, Secondary Area s079: North Myanmar Lowlands)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Upper Dihing (East) Complex includes four reserve forests, namely i. Upper Dihing (East Block) RF including the area leased to oil fields (13,168 ha), ii. Kakojan RF (2,345 ha), iii. Duarmara RF (653 ha), and iv. Torani RF (2,040 ha). The Upper Dihing (East Block), Kakojan, and Digboi Oil Field areas are contiguous, while Torani and Duarmara are isolated areas some distance away. These are among the last remaining patches of Tropical Evergreen Forest of some significance in Assam. The IBA area consists of slightly undulating plains. Dibru, the main river, flows through the Upper Dihing and Kakojan Reserve Forests. Many small perennial streams criss-cross the area, notably Kharjan river. Small pools and natural or artificial swampy areas are also present in the jungle (Lahkar 2001). These

forests are globally important, as a sizeable number of the White-winged Duck *Asarcornis scutulata* is found here (Choudhury 1996, 1998). There are relatively recent reports of the Masked Finfoot *Heliopais personatus* from this site (Choudhury 1997). There is also a historical record of Baikal Teal *Anas formosa* (Hooper 1958).

The vegetation of the site is mainly Tropical Wet Evergreen Rain Forest type. The important tree species are *Dipterocarpus macrocarpus*, *Shorea assamica*, *Mesua ferrea*, *Terminalia myriocarpa*, *Artocarpus chaplasha*, *Dillenia indica*, *Anthocephalus cadamba*, *Bombax ceiba*, and *Ficus* spp. Scattered marshy depressions bear *Alpinia allughas*, *Arundo donax*, *Imperata cylindrica*, and *Saccharum* spp. *Tectona grandis* is seen in roadside plantations (Lahkar 2001).



DHIRTIMAN MUKHERJEE

Upper Dihing (East) and Upper Dihing (West) are among the last remaining patches of Tropical Evergreen Forest in Assam. Both these IBAs have a small population of White-winged Duck *Asarcornis scutulata*

AVIFAUNA

About 300 species of birds are reported from the site, which include Threatened species such as the White-bellied Heron *Ardea insignis* and Pale-capped Pigeon *Columba punicea* (Lahkar 2001). The Malay Fish-owl *Bubo ketupu* has also been recorded (Lahkar 2002). Some interesting species of various biomes are: White-cheeked Hill-partridge *Arborophila atrogularis*, Grey Peacock-pheasant *Polyplectron bicalcaratum*, Masked Finfoot *Heliopais personatus*, Bamboo Partridge *Bambusicola fytchii*, Pale-headed Woodpecker *Gecinulus grantia*, Crow-billed Drongo *Dicrurus annectans*, Black-gorgeted Laughingthrush *Garrulax pectoralis*, Black-backed Forktail *Enicurus immaculatus*, Spotted Wren-warbler *Spelaeornis formosus*, Rufous-bellied Niltava *Niltava sundara*, Dull Slaty-bellied Ground Warbler *Tesia cyaniventer*, Pied Falconet *Microhierax melanoleucos*, Grey-headed Parakeet *Psittacula finschii*, Blyth's Kingfisher *Alcedo hercules*, Austen's Brown Hornbill *Anorrhinus austeni*, Rufous-necked Hornbill *Aceros nipalensis*, Golden-throated Barbet *Megalaima franklinii*, Blue-throated Barbet *M. asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Blue-naped Pitta *Pitta nipalensis*, Maroon Oriole *Oriolus trailii*, Black-browed Treepie *Dendrocitta frontalis*, Himalayan Treepie *D. formosae*, Smaller Grey Cuckooshrike *Coracina*

melaschistos, Short-billed Minivet *Pericrocotus brevirostris*, Orange-bellied Chloropsis *Chloropsis hardwickii*, White-throated Bulbul *Criniger flaveolus*, Spot-throated Babbler *Pellorneum albiventris*, Nepal Babbler *Alcippe nipalensis*, Slaty-backed Forktail *Enicurus immaculatus*, Black-breasted Thrush *Turdus dissimilis*, and Red-headed Tit *Aegithalos concinnus*.

Among other interesting birds, the Chinese Pondheron *Ardeola bacchus*, rarely seen in eastern Assam, was recorded in October, 2000; Malay or Tiger Bittern *Gorsachius melanolophus* was also seen in October, 2000 (Lahkar 2001). More than 30 Ferruginous Duck *Aythya nyroca* were counted in Digboi Oil Field in February, 2000 (Lahkar 2001).

The Masked Finfoot is a rare bird all over its range from northeastern India to Malaya and Sumatra. It is a shy and secretive bird inhabiting wetlands inside rainforests, preferring habitat similar to the White-winged Duck *Asarcornis scutulata*. Many local villagers and forest staff are not aware of any such bird, although they are familiar with the White-winged Duck (Choudhury 1997). Individuals were seen near Dhekiajan forest village in Upper Dihing (East Block) RF in 1990–1991 by Robin Sonowal, and in Dibru river near Nazirating, just outside the boundaries of Kakojan and Upper Dihing (East Block) RF in August–September, 1992 by T. Moran (Choudhury 1997).

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardea insignis</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
White-winged Duck	<i>Asarcornis scutulata</i>
Masked Finfoot (historical record)	<i>Heliopais personatus</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Pale-capped Pigeon	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Austen's Babbler	<i>Stachyris oglei</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Ferruginous Duck	<i>Aythya nyroca</i>
White-cheeked Hill-partridge	<i>Arborophila atrogularis</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Austen's Brown Hornbill	<i>Anorrhinus austeni</i>
Chestnut-backed Laughingthrush	<i>Garrulax nuchalis</i>

ENDEMIC BIRD AREA 130: EASTERN HIMALAYA

Austen's Babbler	<i>Stachyris oglei</i>
Black-browed Leaf-warbler	<i>Phylloscopus cantator</i>

SECONDARY AREA S079: NORTH MYANMAR LOWLANDS

Chestnut-backed Laughingthrush	<i>Garrulax nuchalis</i>
--------------------------------	--------------------------

The Pacific Golden Plover *Pluvialis fulva* is an uncommon winter visitor in Assam. Five birds were seen near Kherjan forest village just outside the Upper Dihing (East) RF. This is the second record for the state (Choudhury 2000, Lahkar 2001). Individuals of the Pale-capped Pigeon *Columba punicea* were also reported from this IBA, mainly in the Upper Dihing (East Block) RF (Lahkar 2001). Buffy Fish-owl *Bubo ketupu* was also reported from Upper Dihing RF after almost 100 years (Lahkar 2001).

OTHER KEY FAUNA

Mammalian fauna of the site includes Tiger *Panthera tigris* (occasional), Leopard *P. pardus*, Asiatic Elephant *Elephas maximus*, Western Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Pig-tailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Slow Loris *Nycticebus bengalensis*, Gaur *Bos gaurus*, Golden Jackal *Canis aureus*, Wild Dog *Cuon alpinus*, Malayan Giant Squirrel *Ratufa bicolor*, Common Giant Flying Squirrel *Petaurista petaurista*, Sambar *Rusa unicolor*, and Barking

Deer *Muntiacus muntjak*. Not much is known about the reptiles and amphibians.

LAND USE

- Forest
- Industry (oil fields)
- Agriculture

THREATS AND CONSERVATION ISSUES

- Pollution from oil drilling
- Expansion of oil drilling
- Encroachment by villagers
- Illegal felling of trees
- Illegal fishing
- Poaching

The main problem is oil drilling that extends over large parts of Upper Dihing (East Block) RF. Many of the waterbodies near the oil rigs are heavily polluted, posing a serious threat to the environment. Illegal felling of trees, encroachment by forest villagers and surrounding villagers, and poaching including collection of eggs and ducklings of the White-winged Duck, are other major issues. There is urgent need to control poaching, to improve management of the reserve forests, and to create environmental awareness among the villagers and people from the oil refineries. The White-winged Duck could become a focal point for the conservation of these excellent tropical moist forests.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar.

KEY REFERENCES

- Choudhury, A.U. (1996) Survey of the White-winged Wood Duck and the Bengal Florican in Tinsukia district and adjacent areas of Assam and Arunachal Pradesh. The Rhino Foundation for nature in NE India, Guwahati.
- Choudhury, A.U. (1997) Current status of the Masked Finfoot in India. *Newsletter for Birdwatchers* 37(5): 90–91.
- Choudhury, A.U. (1998) Status and conservation of the white-winged duck in eastern Assam, India. *OBC Bulletin* 28: 14–17.
- Choudhury, A.U. (2000): *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Hooper, C.D. (1958) Occurrence of the Baikal Teal in Assam. *JBNHS* 55(2): 359–360.
- Lahkar, K. (2001) Birds of Upper Dihing (East Block) and Kakojan Reserved Forests and Digboi Forest Area. Report to the Bombay Natural History Society, Mumbai. 30 pp. Unpubl.
- Lahkar, K. (2002) Notable bird records from Digboi. *The Rhino Foundation for nature in NE India Newsletter* 4: 23.

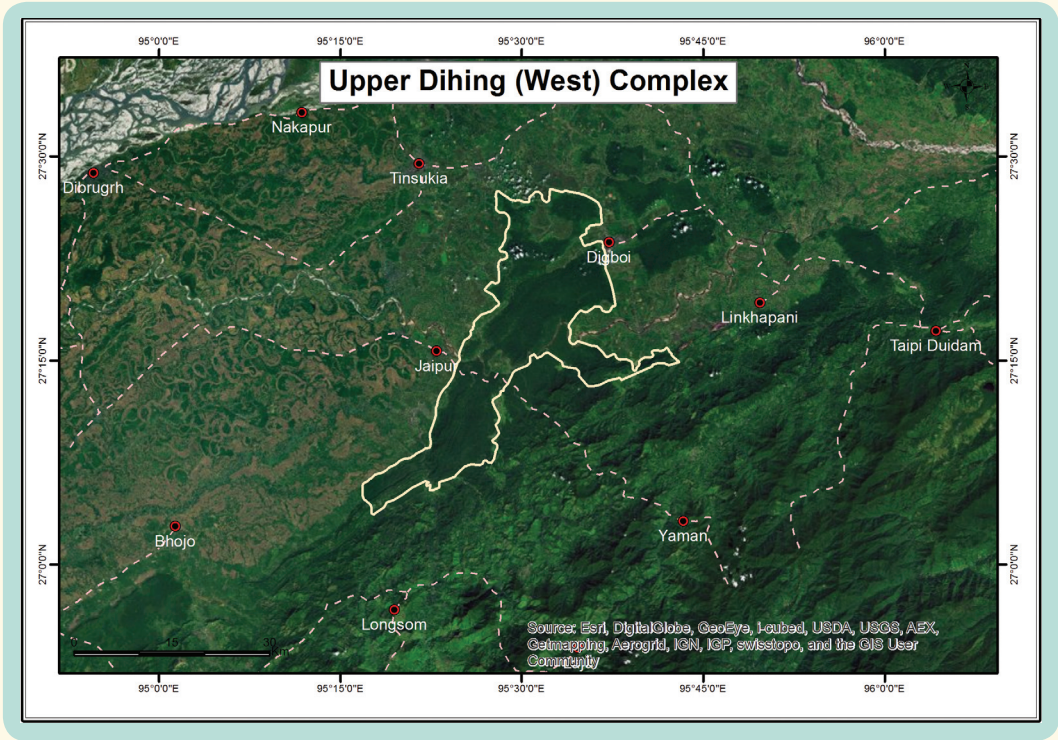
UPPER DIHING (WEST) COMPLEX

IN-AS-45

IBA Site Code	: IN-AS-45	Area	: 35,656 ha
Administrative Region (State)	: Assam	Altitude	: 120–474 mslh
Districts	: Dibrugarh, Tinsukia, Sibsagar	Rainfall	: 3,000–4,000 mm
Coordinates	: 27° 16' 00" N, 95° 28' 30" E	Temperature	: 7 °C to 35 °C
Ownership	: State	Biogeographic Zone	: Northeast
		Habitats	: Tropical Wet Evergreen Forest

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

This complex includes six Reserve Forests and three proposed Reserve Forests, all contiguous. The areas constituting this IBA are i. Upper Dihing (c. 22,000 ha), ii. Joypur (c. 8,870 ha), iii. Dilli (3,030 ha), iv. Makumpani including additions (538 ha), v. Desali (200 ha), and vi. Digboi (West Block) (929 ha). Together with the adjacent Dihing-Patkai Wildlife Sanctuary, they form the largest contiguous tropical rainforest area extant in the whole of Brahmaputra Valley (Choudhury 1996a). Upper Dihing (West Block) has a long history of protection and management as a reserve forest, which was notified more than a century ago, in 1888. Some of the finest rain forests on flat plains in India are seen here. The topography varies from slightly undulating plains in Upper Dihing to hills in Joypur, Dirak, and Dilli, which are the foothills of the Patkai

range. The habitats in Dilli and Joypur are contiguous with the forests of Arunachal Pradesh.

Burhi-Dihing is the main river flowing through the site. Other notable rivers are Disang or Dilli, Namsang, and Digboi. Many small perennial streams criss-cross the area; noteworthy among them are the Janglu and Pawoi nullahs. The forests, especially Upper Dihing (West Block), have the largest known population of the globally Endangered White-winged Duck *Asarcornis scutulata* (Choudhury 1996a, 1998). Together with other forests, the estimated population is higher than in any IBA in the world (BirdLife International 2001, Choudhury 2000). This area is also rich in primates and was recommended for protected area status way back in the 1980s (Choudhury 1989). Five species of hornbills occur in the area, including the rarer Austen’s Brown Hornbill *Anorrhinus austeni* and the Rufous-necked *Aceros nipalensis*.



ANWARUDDIN CHOUDHURY

Small forest pools are the main habitat of White-winged Duck *Asarcornis scutulata*

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardea insignis</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pale-capped Pigeon	<i>Columba punicea</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Beautiful Nuthatch	<i>Sitta formosa</i>

NEAR THREATENED

Great Pied Hornbill	<i>Buceros bicornis</i>
Austen's Brown Hornbill	<i>Anorrhinus austeni</i>

ENDEMIC BIRD AREA 130: EASTERN HIMALAYA

Yellow-vented warbler	<i>Phylloscopus cantator</i>
-----------------------	------------------------------

Soraipung (meaning 'bird spring') in Upper Dihing is a well-known site for Asiatic Elephant *Elephas maximus* and avifauna.

The habitat is Tropical Rainforest. Champion & Seth (1968) described it as Assam Valley Tropical Wet Evergreen Forest. *Arundo donax*, *Imperata cylindrica*, and *Saccharum* spp. occur in the scattered marshy depressions.

AVIFAUNA

More than 300 bird species have been recorded so far, probably more are present as many skulking and dense-forest birds are difficult to see (A.U. Choudhury, *pers. comm.* 2002).

In the 1870s, the White-winged Duck was common in Tinsukia and Dhemaji districts (Hume & Marshall 1879–1881, Baker 1908), and it was considered to be the fourth commonest duck species (after Common Teal *A. crecca*, Mallard *A. platyrhynchos*, and Gadwall *Anas strepera*) at pools, ponds, and other wetlands in the forests throughout the area, which was then known as Sadiya Frontier Tract in the 1930s, with at least a pair in almost every waterlogged area (Parsons 1939, BirdLife International 2001).

Most of the White-winged Ducks reported were from this IBA during a 1996 study carried out by Anwaruddin Choudhury. The population was estimated to be 90 in the Upper Dihing RF (West

Block) alone, and 19 in Joypur RF during 1992–1994 (Choudhury 2000). These figures also include the estimate for Dihing-Patkai WLS. Lone birds or small groups of twos and threes could easily be seen in the secluded jungle pools of Upper Dihing (West Block) RF. There is no recent data of the last ten years.

Upper Dihing (West Block) RF is also a good place for other rare birds. Small groups of Rufous-necked Hornbill *Aceros nipalensis* are seen deep inside the forest. Austen's Brown Hornbill *Anorrhinus austeni* is also seen. The elusive White-bellied Heron *Ardea insignis* has been seen in Joypur RF in winter. Usually singletons or twos were seen on the banks of Namsang and Burhi-Dihing rivers (Mridu Paban Phukan to Kulojyoti Lahkar). We do not have any recent record during the last 10 years. Perhaps this is among the few IBA sites in Assam where the Beautiful Nuthatch *Sitta formosa* can be seen (Mridu Paban Phukan to Kulojyoti Lahkar), as there is no recent report of the species from



RAMIKI SREENIVASAN

Pale-capped Pigeon needs large intact forest such as Upper Dihing as it move in search of fruits. Despite its wide distribution in the Eastern Ghats, northeast India, and Southeast Asia, it is thinly distributed and declining in number

anywhere in Assam (Choudhury 2000), except Barail Hills (Alström *et al.* 1994). The rare Pale-capped Pigeon *Columba punicea* was also sighted in this IBA, in all three reserve forests. (A.U. Choudhury, *pers. comm.*)

OTHER KEY FAUNA

The area is rich in other wildlife, with five species of primates: Western Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Pig-tailed Macaque *Macaca nemestrina*, Rhesus Macaque *M. mulatta*, Slow Loris *Nycticebus bengalensis* (Choudhury 1996b) and two large cats Tiger *Panthera tigris* and Leopard *P. pardus*. The Clouded Leopard *Neofelis nebulosa*, Leopard Cat *Prionailurus bengalensis*, Marbled Cat *Pardofelis marmorata*, and Golden Cat *Catopuma temminckii* occur in the area (camera trapped by Kashmira Kakati)

Wild Dog *Cuon alpinus* is another predator of these forests. Their main prey species are Sambar *Rusa unicolor* and Barking Deer *Muntiacus muntjak*. Asiatic Elephant *Elephas maximus* and Gaur *Bos gaurus* are present. Indian Wild Water Buffalo *Bubalus arnee* is no longer found, but two problem animals were released after being captured from inhabited villages during the last decade in Joypur RF (A.U. Choudhury, *pers. comm.*). The closed canopy forest provides habitats for Malayan Giant Squirrel *Ratufa bicolor*

and Common Giant Flying Squirrel *Petaurista petaurista* (Choudhury 1996a). Not much is known about the reptiles and amphibians.

LAND USE

- Forest
- Industry (oil installations)
- Agriculture

THREATS AND CONSERVATION ISSUES

- Encroachment by forest villagers
- Encroachment by fringe villagers
- Pollution from oil and coal mining
- Expansion of oil and coal mining
- Illegal felling of trees
- Illegal fishing
- Poaching
- Snaring and collection of eggs and ducklings
- Use of pesticides in the nearby tea gardens

The main conservation issue is mining of oil and coal, the former restricted to Upper Dihing (West Block) RF, and the latter in Joypur and Dilli RFs. Many waterbodies near the oil rigs are heavily polluted, posing a serious threat to the environment. Coal mining in Joypur is done illegally, and needs to be stopped at once.

These forests, especially Upper Dihing (West Block) RF, were logged from the 1930s, and were a major source of raw material for the plywood industry. Trolley lines were laid inside the forest, but they have been abandoned. Despite heavy logging, the habitats and wildlife survived to a great extent. Illegal felling of trees, encroachment by forest villagers, and poaching, including collection of eggs and ducklings, particularly of the White-winged Duck, are other major issues.

After the great earthquake of 1950 and subsequent floods, many displaced persons were settled inside Upper Dihing (West Block) RF as 'Forest Villagers'. This short-term solution led to some of the finest habitats of the White-winged Duck, Masked Finfoot, and Asiatic Elephant being cleared for settlement, because of their suitability for paddy cultivation (marshy area with pools). Lakkhipathar, Borjan, and Balijan are some such examples. Unfortunately, not much can be done now, except to protect the remaining habitat from further encroachment and degradation.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Kulojyoti Lahkar, Mridu Paban Phukan.

KEY REFERENCES

Alstrom, P., Jirle, E., Jaderblad, M., Kjellen, N., Larsson, G., Paulsrud, A., Saellstrom, J., Smutterberg, P., and Alind, P.

- (1994) Birds and Mammals observed in Assam in February 1994. Unpublished report.
- Baker, E.C.S. (1908) *The Indian Ducks and their Allies*. Bombay Natural History Society & R.H. Parker, London. Pp. xi + 292.
- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- Champion, H.G. and Seth, S.K. (1968) *A Revised Survey of Forest Types of India*. Govt. of India Press, Delhi.
- Choudhury, A.U. (1989) The Primates of Assam, their Distribution, Habitat and Status. Ph.D. Thesis, Gauhati University. Pp. 300 + maps.
- Choudhury, A.U. (1996a) Survey of the White-winged Wood Duck and Bengal Florican in Tinsukia district and adjacent areas of Assam and Arunachal Pradesh. The Rhino Foundation for nature in NE India, Guwahati.
- Choudhury, A.U. (1996b) Survey of primates in some parts of eastern and central Assam. Final Report to ASTEC, Guwahati. Pp. 32 + maps.
- Choudhury, A.U. (1998) Status and conservation of the white-winged duck in eastern Assam, India. *OBC Bulletin* 28: 14–17.
- Choudhury, A.U. (2000): *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Hume, A.O. and Marshall, C.H.T. (1879–1881) *The Game Birds of India, Burmah and Ceylon*. 3 vols. Published by the authors, Calcutta.
- Parsons, R.E. (1939) Migration routes of Geese. *JBNHS* 40(4): 764–765.

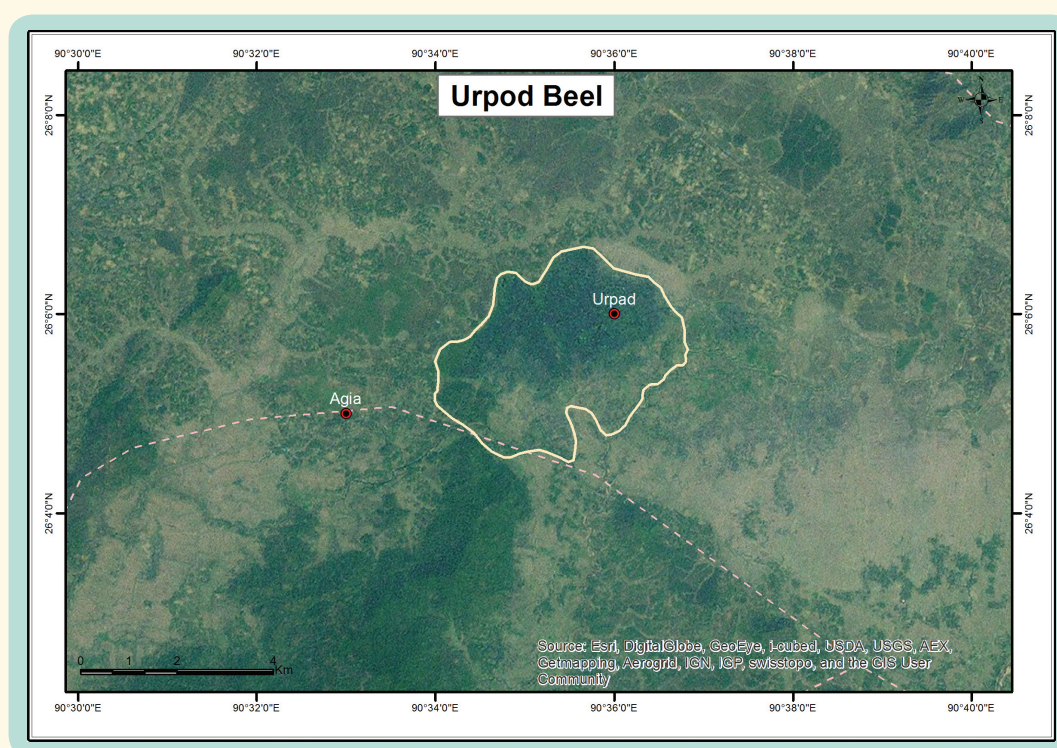
URPOD BEEL

IN-AS-46

IBA Site Code	: IN-AS-46	Altitude	: 40 msl
Administrative Region (State)	: Assam	Rainfall	: >2,000 mm
District	: Goalpara	Temperature	: 7 °C to 35 °C
Coordinates	: 26° 04' 60" N, 90° 35' 60" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Freshwater Swamp, Seasonal Marsh
Area	: 1,000 ha		

IBA CRITERIA : A1 (Threatened species), A4iii (≥20,000 waterbirds)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

Urpod Beel is the largest lake in western Assam, with a waterspread of c. 700 ha. It is only 12 km from Goalpara town, the district headquarters. It is approximately 150 km from the state capital, Guwahati. Urpod, an important site for wintering waterfowl, is connected with two more waterbodies, Patakata Beel and Matia Beel to the east, which makes the total area of the wetland more than 1,000 ha. The Ajagar Hill Reserve Forest to the south, Rakhashini RF to the north, and Sagunbahi RF to the west surround Urpod Beel. These RFs are mainly degraded *Sal Shorea robusta* forests, except for Ajagar RF, the largest in Goalpara district, which is Mixed Deciduous type and adjacent to the West Garo Hills district of Meghalaya. It is in comparatively good condition.

Urpod Beel is well known for *Lotus Nelumbo*, lilies *Nymphaea*, as well as *Trapa* spp. and *Euryale ferox*. Villagers harvest them for food and medicine. In shallow zones, sedges and reeds abound. *Ipomoea aquatica* has covered a large part of the waterbody, almost acquiring weed proportions.

Not much work has been done on the birds or mammals of this *beel*, but Deka *et al.* (2011) published a preliminary checklist of Desmids (green algae) from this site. They reported 91 species of Desmids including *Cosmarium cyclicum*, *Desmidium bengalicum*, *Hyalotheca dissiliens*, *Staurostrum leave*, *Xanthidium burkillii*, and *Closterium lunula*.

AVIFAUNA

Like most other wetlands of Assam, Urpod Beel is under tremendous human pressure. Despite this, very large

numbers of waterfowl are present in winter. If it were adequately protected from human disturbance, it could attract hundreds of thousands of waterfowl. The Lesser Adjutant *Leptoptilos javanicus* is regularly seen. There are no recent records of Greater Adjutant *L. dubius*, but with protection to the habitat, it could reappear.

OTHER KEY FAUNA

The wetland is surrounded by degraded forest where the Asiatic Elephant *Elephas maximus* is still seen. There are confirmed records of Leopard Cat *Prionailurus bengalensis*. Other predators probably occur. The wetland is enriched with more than 45 species of fish, such as carps, climbing perch (*Anabas* sp.), and catfish.

LAND USE

- Wetland
- Agriculture

THREATS AND CONSERVATION ISSUES

- Siltation
- Agriculture
- Brick kilns
- Grazing
- Overfishing

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
-----------------	------------------------------

As in all wetlands, siltation, excessive fishing, and reclamation for agriculture are the major conservation issues. An awareness programme has been undertaken

by a local NGO Nature's Foster for the local residents and fishermen.

KEY CONTRIBUTOR

Nature's Foster

KEY REFERENCE

Deka, S.J., Sarma, C.G., and Deka, S.P. (2011) Preliminary checklist of Desmids of Urapad Beel Goalpara District, Assam, India. *Asian Journal of Experimental Biological Sciences* 2(3): 391–398.



DHRITIMAN MUKHERJEE

Urpod Beel along with Patakat Beel and Matia Beel forms a total of 1,000 ha. They are under tremendous human pressure (below). Despite this, very large numbers of waterfowl are seen in winter



ANWARUDDIN CHOUDHURY

BARAIL WILDLIFE SANCTUARY

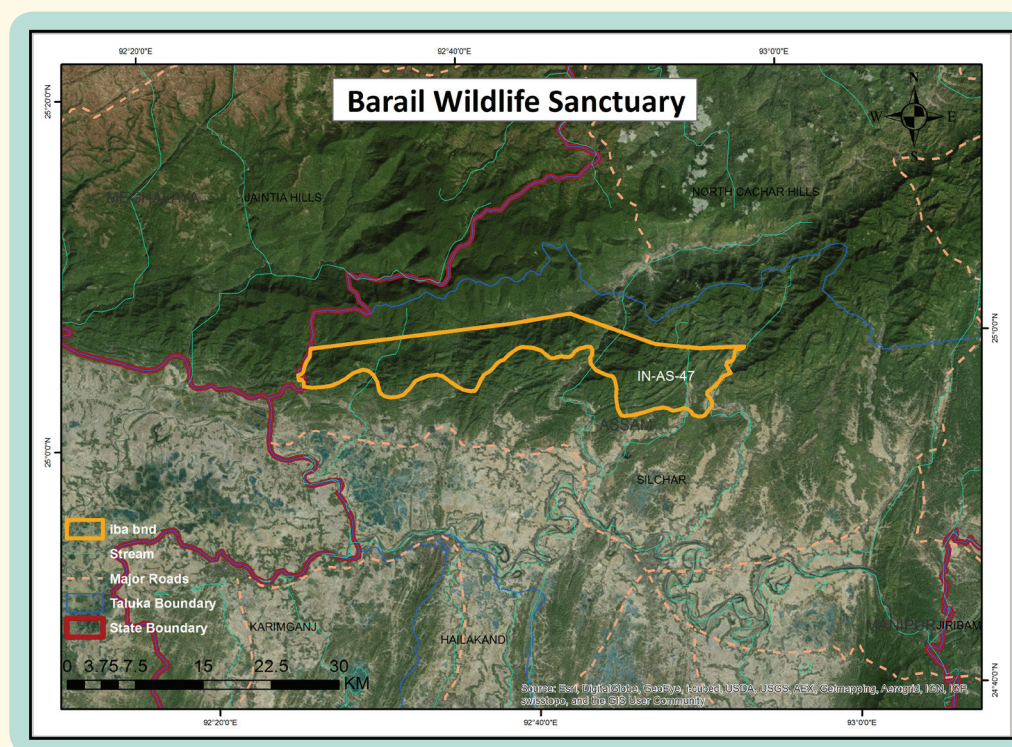
IN-AS-47

IBA Site Code	: IN-AS-47
Administrative Region (State)	: Assam
District	: Cachar
Coordinates	: 25° 00' 01-09" N, 92° 26' -52" E
Ownership	: State
Area	: 32,600 ha

Altitude	: 100–1,500 msl
Rainfall	: 2,000–6,000 mm
Temperature	: 2 °C to 35 °C
Biogeographic Zone	: Northeast
Habitats	: Tropical Wet Evergreen, Semi-evergreen, and Sub-tropical Broadleaf Hill Forests

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 130: Eastern Himalaya), A3 (Biome 8: Sino-Himalayan Subtropical Forest, Biome 9: Indo-Chinese Tropical Moist Forest)

PROTECTION STATUS : Wildlife Sanctuary, notified January, 2004.



GENERAL DESCRIPTION

Barail Wildlife Sanctuary includes the North Cachar Hill Reserve Forest (RF) and Barail RF of Cachar, and was notified in 2004 as a wildlife sanctuary (Choudhury 2005).

Barail Range is the watershed between the Brahmaputra and Barak rivers. The terrain ranges from flat and undulating in the river valleys (100 msl), to mountainous with steep slopes. The highest peak is Mt Serphai (1,500 m). The climate is tropical monsoon type. Barail forests are biologically important, with a number of globally Threatened species (Choudhury 1993).

Hill rivers and streams such as the Boleswar, Jatinga, and Modhura are the main water sources, along with numerous streams that feed the rivers. The annual rainfall varies from 2,000 mm to more than 6,000 mm. The westernmost

part of the range receives the heaviest rainfall in Assam (Choudhury 1993).

Vegetation is Tropical Evergreen at low elevations (below 1,000 m), Semi-evergreen in the areas of human disturbance, and Subtropical Broadleaf in the upper reaches. Champion & Seth (1968) classified it as Cachar Tropical Evergreen Forest, Cachar Tropical Semi-evergreen Forest, and Subtropical Broadleaf Hill Forest. The undisturbed riparian patches are rich in palms and canes. Large patches of wild banana occur in the moist forest openings and along waterways.

The undulating foothills in the south of the IBA and the plains beyond have been extensively converted to tea gardens and settled cultivation, respectively. The main secondary landscape elements are cultivated flatland,

ABHIJIT DAS



Cherrapunjee Keelback *Amphiesma xenura* was described from Meghalaya and now it has been found in Barail Wildlife Sanctuary and Ngengpui (IBA) in Mizoram

extensive bamboo brakes, tree plantations (Teak *Tectona grandis*, Sal *Shorea robusta*), secondary and disturbed forest (betel-vine plantation), and village gardens including Areca Palm plantations.

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin	<i>Francolinus gularis</i>

ENDEMIC BIRD AREA 130: EASTERN HIMALAYA

Striped Laughingthrush	<i>Trochalopteron virgatum</i>
Brown-capped Laughingthrush	<i>Ianthocincla austeni</i>
Grey Sibia	<i>Malacias gracilis</i>
Beautiful Sibia	<i>Malacias pulchella</i>
White-naped Yuhina	<i>Yuhina bakeri</i>
Black-browed Leaf-warbler	<i>Phylloscopus cantator</i>

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Pied Falconet	<i>Microhierax melanoleucos</i>
Mountain Bamboo-partridge	<i>Bambusicola fytchii</i>
Blue-throated Barbet	<i>Megalaima asiatica</i>
Bay Woodpecker	<i>Blythipicus pyrrhotis</i>
Black-winged Cuckooshrike	<i>Coracina melaschistos</i>
Short-billed Minivet	<i>Pericrocotus brevirostris</i>
Slender-billed Oriole	<i>Oriolus tenuirostris</i>
Maroon Oriole	<i>Oriolus traillii</i>
Grey Treepie	<i>Dendrocitta formosae</i>

BIOME 9: INDO-CHINESE TROPICAL MOIST FOREST

Grey Peacock-pheasant	<i>Polyplectron bicalcaratum</i>
Pale-headed Woodpecker	<i>Gecinulus grantia</i>

AVIFAUNA

This site was selected as an IBA based on its exceptionally rich birdlife, including many Threatened species. The high avian diversity of the Barails was documented long ago (Baker 1922–30; Hume 1877, 1880), although those studies did not cover most of the new sanctuary. A breeding site of the Slender-billed Vulture *Gyps tenuirostris* was recorded in the Barails. The Lesser Adjutant *Leptoptilos javanicus* is seen in the southern valleys, while there are past records of the Swamp Francolin *Francolinus gularis* from the southwestern fringe (Choudhury 2000).

The site covers two biomes: Biome 8 (Sino-Himalayan Subtropical Forest) at c. 1,000 to 2,000 m, and Biome 9 (Indo-Chinese Tropical Moist Forest) mainly below c. 1,000 m. BirdLife International (undated) has listed 95 species in Biome 8, of which nine are found here. Two out of nine species listed in Biome 9 are also present. Both are quite common in the Tropical Moist Forests. As can be expected, some species of other biomes are also found, mainly as winter migrants. For example, Grey-backed Shrike *Lanius tephronotus* (Biome 5: Eurasian High Montane – Alpine and Tibetan) is seen in winter.

OTHER KEY FAUNA

Seven species of primates are found, these are: Slow Loris *Nycticebus bengalensis*, Stump-tailed Macaque *Macaca arctoides*, Assamese Macaque *M. assamensis*, Rhesus Macaque *M. mulatta*, Pig-tailed Macaque *M.*



ABHIJIT DAS

Assamese Cat Snake *Boiga quincunciata* is extremely rare and was first described from a tea garden near Dibru-Saikhowa in upper Assam. Later, it was found in Barail Wildlife Sanctuary and in Mizoram

nemestrina leonina, Capped Langur *Trachypithecus pileatus*, and Western Hoolock Gibbon *Hoolock hoolock*. Other mammals include the Asiatic Black Bear *Ursus thibetanus*, Asiatic Elephant *Elephas maximus* (occasional), Tiger *Panthera tigris* (very rare), Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Jungle Cat *Felis chaus*, Leopard Cat *Prionailurus bengalensis*, Golden Cat *Catopuma temminckii*, Marbled Cat *Pardofelis marmorata*, Wild Dog *Cuon alpinus*, Sambar *Rusa unicolor*, Indian Muntjac *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Binturong *Arctictis binturong*, and Red Serow *Capricornis rubidus*. Small populations of Gaur *Bos gaurus* also occur. Common reptiles include various species of lizards and snakes throughout the site. The Brown Hill Tortoise *Manouria emys* is also met with occasionally.

LAND USE

- Forest
- Agriculture

THREATS AND CONSERVATION ISSUES

- Agriculture (*Jhum* cultivation)
- Plantation of Teak, Sal, Betel
- Encroachment
- Hunting and poaching

The East-West Corridor, a four-lane expressway passes through this sanctuary for some distance. The hill slopes, especially outside the sanctuary, are getting degraded by

jhum cultivation, tree felling, and betel-vine plantation. The vines are planted after clearing the middle layer (shrubs) and understorey in mature forest, and are cultivated by Khasi settlers. Sometimes banana is also cultivated in these plantations.

Other major issues in the area are hunting of wildlife that has been curtailed to some extent after the declaration of the sanctuary. The main tribes of the area are Hmar, Kuki, Khasi (Jaintia), Karbi, and Dimasa Kachari.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- Baker, E.C.S. (1922–30) *The Fauna of British India. Birds*. 8 vols. Taylor and Francis, London.
- BirdLife International (undated) *Important Bird Areas (IBAs) of Asia. Project Briefing Book*. Pp. 103. Unpubl.
- Champion, H.G. and Seth, S.K. (1968) *A Revised Survey of Forest Types of India*. Govt. of India Press, Delhi.
- Choudhury, A.U. (1993) Potential Biosphere Reserves in Assam (India). *Tigerpaper* 20(1): 2–8.
- Choudhury, A.U. (2000) *Birds of Assam*. Gibbon Books and WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2005) Amchang, Barail and Dihing-Patkai – Assam's new wildlife sanctuaries. *Oryx* 39(2): 124–125.
- Hume, A.O. (1877) A first list of the birds of northeastern Cachar. *Stray Feathers* 5: 1–47.
- Hume, A.O. (1880) A second list of the birds of northeastern Cachar. *Stray Feathers* 9: 241–259.

CHIRANG RESERVE FOREST

IBA Site Code : IN-AS-48

Administrative Region (State) : Assam

District : Kokrajhar

Ownership : State

Coordinates : 26° 47' 34" N, 90° 19' 60" E

Area : 400 sq. km

Altitude : 100–300 msl

Rainfall : 2,000–3,000 mm

Temperature : 6 °C to 30 °C

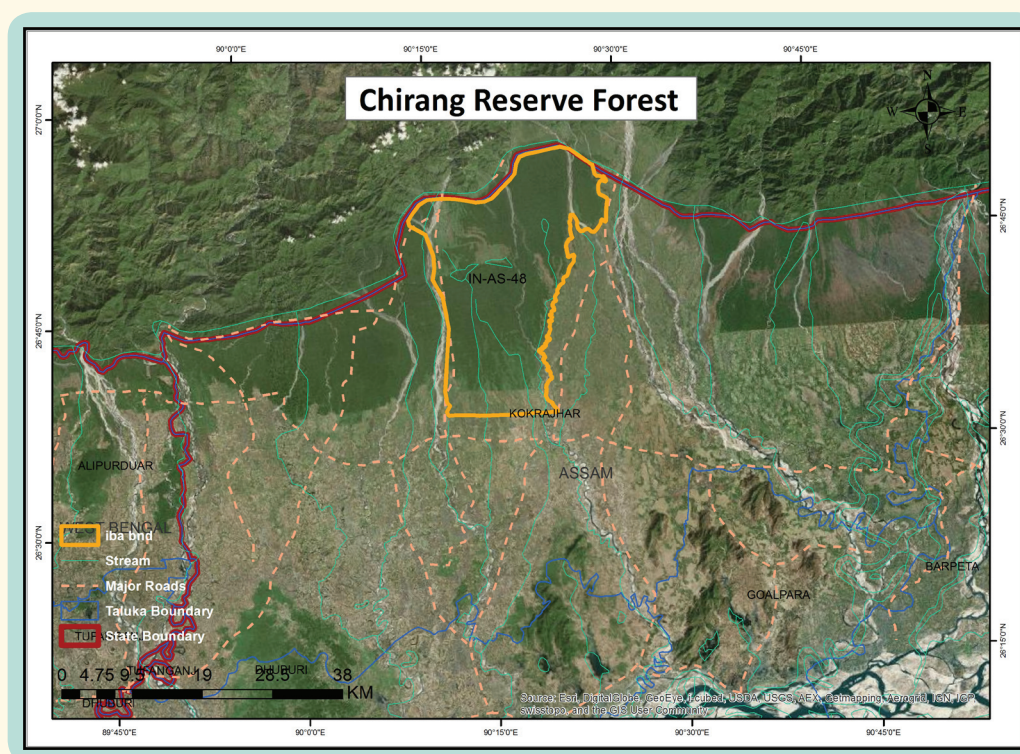
Biogeographic Zone : Northeast

Habitats : Tropical Semi-evergreen Forest,
Tropical Moist Deciduous Forest

IN-AS-48

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS : Not officially protected. Part of buffer zone of Manas TR.



GENERAL DESCRIPTION

Chirang and Ripu are two reserve forests with contiguous habitats in extreme western Assam, bordering West Bengal and Bhutan. They are also part of the buffer zone of Manas Tiger Reserve. The forests of Ripu and Chirang are contiguous with those of Buxa Tiger Reserve in West Bengal and Phipsoo Wildlife Sanctuary in Bhutan. These forests have the largest known population of the Endangered Golden Langur *Trachypithecus geei* in India (Choudhury 2002) and were treated as a single IBA (Islam & Rahmani 2004). However, in view of their unique conservation issues and large size, they have been split into two IBAs. The total area of Chirang RF was 593 sq. km, however, since 1989, a third of this forest has been clearfelled and encroached upon due to insurgency related problems. Hence, c. 400 sq.

km is now being treated as an IBA. Located in the northern part of Kokrajhar district, and nestling in the foothills of the Bhutan Himalaya, Chirang has some of the finest examples of *bhabar* forest with *Sal Shorea robusta* as the dominant species. Further north, the forest is Semi-evergreen type. Chirang RF is easily accessible from Kokrajhar district headquarters, c. 25 km away.

The terrain is largely flat or gently sloping from north to south, with some foothills towards the north. The main rivers that flow through this IBA are Saralbhangra and Champamoti. There is a large wetland called Maachbhandar inside Chirang RF. Besides dense Tropical Semi-evergreen and Tropical Moist Deciduous forests, riverine forests with light woodland and grasslands are also found.

Chirang is a vital habitat that serves as a corridor linking

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Bengal Florican (past record)	<i>Houbaropsis bengalensis</i>
ENDANGERED	
Greater Adjutant	<i>Leptoptilos dubius</i>
VULNERABLE	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Rufous-necked Hornbill	<i>Aceros nipalensis</i>
Hodgson's Bushchat (?)	<i>Saxicola insignis</i>
Marsh Babbler (?)	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Black-breasted Parrotbill (?)	<i>Paradoxornis flavirostris</i>
ENDEMIC BIRD AREA 131: ASSAM PLAINS	
Marsh Babbler	<i>Pellorneum palustre</i>
Black-breasted Parrotbill (old record)	<i>Paradoxornis flavirostris</i>

Manas National Park in Assam, with Buxa in West Bengal and the forests of Bhutan, are especially important for Asiatic Elephant *Elephas maximus*. These forests are already part of the Chirang-Ripu Elephant Reserve of Assam.

AVIFAUNA

No detailed study on avifauna has been conducted, but preliminary surveys reveal around 200 bird species (A.U. Choudhury, *pers. comm.* 2003).

The site lies in Biome 9 (Indo-Chinese Tropical Moist Forest), but many species of other biomes are also seen here, such as Slaty-backed Flycatcher (Pygmy Blue Flycatcher) *Ficedula hodgsoni*, Grey-bellied Tesia *Tesia cyaniventer*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckooshrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, and White-throated Bulbul *Alophoixus flaveolus*. Lesser Necklaced Laughingthrush *Garrulax monileger*, Greater or Necklaced Laughingthrush *G. pectoralis*, Rufous-necked Laughingthrush *G. ruficollis*, and Sultan Tit *Melanochlora sultanea* are typical Biome 9 species.

Twelve globally Threatened species are found in this reserve forest. The current status of the Bengal Florican is not confirmed, but there are past records (Choudhury 2006). It is likely to occur in the grasslands of Chirang, may be as a stray visitor. The presence of the Rufous-necked Hornbill



Chirang and Ripu Reserve Forests form the buffer zone of Manas Tiger Reserve. They are also contiguous with Buxa Tiger Reserve in West Bengal and Thapsoo Wildlife Sanctuary in Bhutan, forming a large complex of a few thousand square kilometres of prime forest. Ultapani river (above) flows through Chirang Reserve Forest

Aceros nipalensis proves that the forest is still pristine, at least in parts. On the Bhutan side, this bird is still not uncommon in undisturbed forests. This reserve forest is a stronghold of the Near Threatened Great Pied Hornbill *Buceros bicornis*. There were sites just southwest of Chirang, from where Black-breasted Parrotbill *Paradoxornis flavirostris* was collected in the past (Choudhury 2006).

OTHER KEY FAUNA

The major mammal of these forests is the Golden Langur *Trachypithecus geei*. Assamese Macaque *Macaca assamensis* and Rhesus Macaque *M. mulatta* are also found, sometimes together. Six species of large and small cats are reported: Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Marbled Cat *Pardofelis marmorata*, Fishing Cat *Prionailurus viverrina*, and Golden Cat *Catopuma temminckii*. The Hispid Hare *Caprolagus hispidus* is another rare mammal found chiefly in the grasslands, where Bengal Florican may still occur. Chirang forests are rich in ungulates. Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Cheetal *A. axis*, Barking Deer *Muntiacus muntjak*, Indian Wild Water Buffalo *Bubalus arnee* (= *bubalis*) (occasional), and Gaur *Bos gaurus* share the habitat with Asiatic Elephant, Asiatic Black Bear *Ursus thibetanus*, and Sloth Bear *Melursus ursinus*. Two species of Otter *Lutra lutra* and *Lutrogale perspicillata* are recorded in the rivers and streams. Chinese Pangolin *Manis pentadactyla*, Chinese Porcupine *Hystrix brachyura*, and Binturong *Arctictis binturong* are notable species of this IBA.

The reptile fauna is rich, with Indian Softshell Turtle *Aspideretes gangeticus*, Peacock Softshell Turtle *A. hurum*, Rock Python *Python molurus*, Russell's Viper *Daboia russelii*, Bengal Monitor *Varanus bengalensis*, Water Monitor *V. salvator*, and Tucktoo Gecko *Gekko gekko*. More than 100 species of butterflies have been recorded.

LAND USE

- Forest
- Agriculture (in encroachments and forest villages)



ASAD R. RAHMANI

Chirang Reserve Forest has a large population of Golden Langur *Trachypithecus geei* in India

THREATS AND CONSERVATION ISSUES

- Illegal felling of trees
- Poaching
- Encroachment

These rich forests have been severely affected by social unrest since 1989. The unrest began with a demand for autonomy for local tribals, but it soon led to insurgency, with attendant political and socioeconomic problems. Professional timber smugglers took full advantage of the situation and clearfelled large areas, especially in Chirang RF. At present, felling has been stopped, but the situation is still not under the total control of the Forest Department. Even now, the Forest Department staff is unable to patrol the remote areas of the IBA.

KEY CONTRIBUTORS

Bablu Dey, Subhash Chanda, Arindam Brahma, Anwaruddin Choudhury.

KEY REFERENCES

- Choudhury, A.U. (2002) Golden Langur *Trachypithecus geei* threatened by habitat fragmentation. *Zoos' Print Journal* 17(2): 699–703.
- Choudhury, A.U. (2006) *Birds of Manas National Park*. Gibbon Books & The Rhino Foundation, Guwahati. 84 pp.
- Islam, M.Z. and Rahmani, A.R. (2004) *Important Birds Areas in India: Priority sites for conservation*. Indian Bird Conservation Network: Bombay Natural History Society and BirdLife International (UK). Pp. xviii + 1133

DADARA-PASARIYA-SINGIMARI

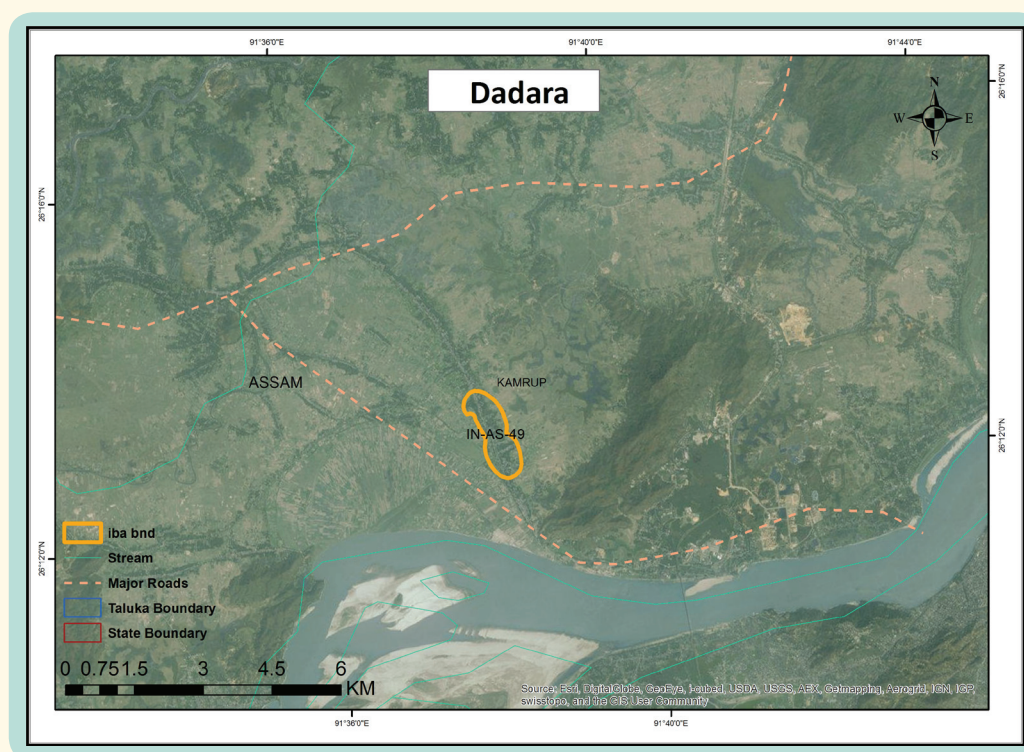
IN-AS-49

IBA Site Code	: IN-AS-49
Administrative Region (State)	: Assam
District	: Kamrup Rural
Coordinates	: 26° 15' N, 91° 40' E
Ownership	: Private

Area	: 300 ha
Altitude	: 60 msl
Rainfall	: >1,500 mm
Temperature	: 7 °C to 36 °C
Biogeographic Zone	: Northeast
Habitats	: Semi-urban

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Privately owned. Not officially protected.



GENERAL DESCRIPTION

This area was identified during a survey for potential IBA sites (Choudhury 2011). Dadara-Pasariya-Singimari are large, adjacent villages in a semi-urban area. They are only 20 km from the heart of Guwahati city (5 km from the city limits). A black-topped road passes through the villages. The inhabitants of these villages are Assamese speaking. The human population is c. 20,000. Almost all the trees in the villages are close to houses. The area has the largest nesting colony of the Endangered Greater Adjutant *Leptoptilos dubius*. The villages have houses with tin/thatch/concrete roof and almost every household has a few trees in their compound. Greater Adjutants build nests in these private village gardens. They prefer tall trees and mainly nest on *Neolamarckia cadamba*, *Bombax ceiba*, *Artocarpus lacucha*,

Artocarpus heterophyllus, *Pithecellobium monadelphum*, and *Archidendron bigeminum*. Sometimes, up to 15 nests are found on one tree.

AVIFAUNA

The key species is the Greater Adjutant, perhaps the most threatened stork in the world. Choudhury (2006) counted 31 birds in 15 trees in March, 2006. A few trees have been cut down, but new trees have also been colonized. In 2012–2013, 152 successful nests were recorded. The average number of successful nests from 2009 to 2014 is 116 (Barman *et al.* 2014).

Occasionally, a few White-rumped Vulture *Gyps bengalensis* are seen in the sky, while Slender-billed Vulture *Gyps tenuirostris*, once plentiful, has not been seen in recent

years. In nearby fields, a few Lesser Adjutant *Leptoptilos javanicus* are also encountered.

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
ENDANGERED	
Greater Adjutant	<i>Leptoptilos dubius</i>
VULNERABLE	
Lesser Adjutant	<i>Leptoptilos javanicus</i>

OTHER KEY FAUNA

As it is a semi-urban area, not many mammals of conservation concern are found in this IBA. Only a few Golden Jackal *Canis aureus* and Jungle Cat *Felis chaus* are met with.

LAND USE

- Human habitation

THREATS AND CONSERVATION ISSUES

Thanks to the community work done by Purnima Devi Barman in the area, since 2010 not a single incident of cutting Greater Adjutant nesting trees has been reported and people have now accepted this species in their area. In

2009, the Aaranyak team led by Barman received Future Conservationist Award from the Conservation Leadership Programme for initiating conservation activities in Assam. In 2009, the team started with a pre-campaign survey in Dadara-Pasariya-Singimari villages to understand the motivational needs of the nest tree owners. Pre-survey results indicated that the villagers were not aware of the importance of this globally Endangered bird. They were also not fully aware of the importance of wildlife conservation in relation to their daily lives. Conservation issues, such as the reason why the nesting trees were cut down, were identified from the survey. Nesting trees are located very close to human habitations. While raising chicks, the adult bird brings fish, snakes, offal, or bones to the nest, and very often these fall to the ground. As these remnants rot, the ground becomes very smelly. The excreta of the birds also makes the ground very dirty and smelly. Many times, chicks that fall from the nest die on the ground. In this situation, the ground below the nesting trees smells offensive and is unhygienic. To solve this problem, nest tree owners disturb the birds, making them vacate the nesting trees. Many nest tree owners were driven by economic needs to cut nesting trees, to earn some money to support their needs, especially during marriages. Furthermore, many nest tree owners believed that bird conservation was the responsibility of the



Street rally in Guwahati for Greater Adjutant conservation awareness



Purnima Devi Burman showing Greater Adjutant to a young admirer of the bird



Villagers writing their names for the protection of their *Hargila*, the local name of Greater Adjutant



Hargila stall during the local fair



Street play to highlight the protection of nesting trees



Street play: singing a song for protection of birds such as *Hargila*



Hargila painting competition for the local school children

government and Forest Department, and if they allowed the birds to nest in their privately owned trees, the government should pay them in return. As the Forest Department does not have such a policy, the nest tree owners either felled the nesting trees or disturbed the birds to make them abandon the nesting trees.

Based on these problems, various community conservation activities were designed to motivate nest tree owners. Various key groups were identified in the villages, who could persuade the nest tree owners to allow the Greater Adjutant to make their nests. The team approached students, youth groups, women, and village elders to generate a feeling of ownership among the villagers towards the Greater Adjutant. They also invited local celebrities to the villages, to request the local people to join in the conservation effort. A local school was adopted to impart conservation education and scholarships were given to students who excelled in their board examinations. Any kind of cash offer to the nest tree owners to support the nesting colonies was consciously avoided, as sustainability of cash offers might be very difficult in the long run, and this might create a bigger problem for the bird. This effort later got support from the Mohammad bin Zayed Species Conservation Fund to continue the work.

Conservation Activities Targeted at Different Groups by the Aaranyak Team

Educating school students: At the very beginning, environmental education activities were started for local

schools. Concentrated efforts were made in a small private school, Sankardeva Sisu Niketan, located in the heart of the nesting colony villages. The majority of the students of this school were children of nest tree owners. The students were introduced to the importance of biodiversity and wildlife conservation through play and group activities. Once these activities became regular, they were slowly introduced to the subject of Greater Adjutant conservation, making them aware that they have a globally Endangered bird in their home gardens. Quiz, drawing, and poem competitions were held to involve them in the conservation of Greater Adjutant in their villages.

Scholarships for the children of nest tree owners:

A small scholarship programme was introduced for the students who excelled in their board examinations. These students who were the beneficiary were thus motivated.

Working with women: Aaranyak worked with the women of the locality to make them understand the importance of Greater Adjutant conservation. The village women were shy as usual about participating in any formal conservation discussion. A cooking competition was organized during the Assamese *Bihu* festival, during which they spontaneously participated in a discussion on conservation of Greater Adjutant in their villages. The team successfully engaged the maternal instinct of the participants, who declared that they would not allow “their” birds to be disturbed during the breeding season. They even “celebrated” and publicly wished the birds a successful nesting season in their villages, just as they do for their own womenfolk!



PURNIMA DEVI BURMAN

Thanks to environmental awareness created by Purnima Devi Burman under the Conservation Leadership Programme, the number of Greater Adjutant has increased in Dadara-Pasariya-Singimari. Credit should go to the villagers for the protection of the nesting trees



Purnima Devi Burman with her local volunteers

The women even wove the traditional Assamese *gamosa* (cloth) with a stork motif, to spread their conservation message about the Greater Adjutant.

Motivating youth groups: Group meetings were organized with local youth in their twenties. They were informed about the importance of this bird, and that if they successfully conserved the nesting colony, their village may become a bird tourism destination. Some bird tourist groups were introduced to these youths, who served as guides for bird trips to the nesting colony. The youths were also taken to Assam State Zoo to introduce them to other conservation initiatives. On being informed that many young chicks die due to nest fall injuries, and saving a fallen chick of this Endangered species (population <1000 individuals) will have a positive impact, many participants rescued fallen chicks and handed them over to the Assam State Zoo for rehabilitation. Released birds were named after the rescuers, to motivate them further.

Involving a local celebrity: A popular Assamese actor was invited to visit the nesting colony and requested to interact with the local people for the conservation of this bird. The message from a celebrity had a deep positive impact, especially on youngsters.

Motivating local police: The Kamrup Police Department was invited to participate in the conservation efforts for the Greater Adjutant nesting colony. They participated in all the conservation programmes and voluntarily published

a hoarding with a motivating conservation message. The involvement of police also acts as a deterrent to poachers.

Integration with religious programmes: The myth of storks helping in the delivery of human babies was narrated to the local elderly women. They liked it and decided to include the stork in the local religious procession, garnering public support for stork conservation efforts in their locality.

Apart from these programmes, educational material in the form of posters and leaflets, etc. were published and distributed among the local students. After four years of continuous conservation efforts, people stopped disturbing the birds in the nesting colony. Most importantly, they developed a feeling of ownership for the nesting colony. From 2010 to 2014, not a single nesting tree was cut by the owners. Youths composed a street play about Greater Adjutant conservation. Nest numbers increased in the colony and villagers happily accepted it. This colony is now undisturbed, and the villagers have become its protectors. Dadara-Pasariya-Singimari colony has become a model of community wildlife conservation in Assam. Conservation groups should visit these villages continuously to keep up the effort. Though the Forest Department does not play an active part in this conservation effort, as this site does not fall within the protected area network, the villagers want the officials' active participation, especially for rescue and rehabilitation of fallen chicks.

Challenges: Insufficiency of funds was a major problem in attending to 50 nest fall cases every year, and the response from the Forest Department could be better. A temporary facility for rescue and rehabilitation of fallen chicks might have a great impact in saving the Greater Adjutant. Organized bird tourism might help in the conservation efforts, but it needs to be carried out with the participation of local people, and not conducted for the sole benefit of tour operators.

KEY CONTRIBUTORS

Purnima Devi Barman, Aaranyak, Anwaruddin Choudhury.

KEY REFERENCES

Barman, P.D. and Sarma, D.K. (2014) Conservation of endangered Greater Adjutant in Assam, India. In: *Waterbirds of India*, Vol. 16. Wildlife Institute of India, Dehradun. Pp. 192–199.

Barman, P.D., Borthakur, M., Das, A.K., and Das, J. (2014) Greater Adjutant conservation through community participation in Assam, India. CLP Project ID F03110012. Final Project Report. Aaranyak. 76 pp.

Choudhury, A.U. (2006) Potential Important Bird Areas in Assam. *Mistnet* Vol. 7, No. 4, Oct-Dec. Pp 14-15.

Choudhury, A.U. (2011) Identification of potential IBAs in Assam. Final Report to Indian Bird Conservation Network, BNHS, Mumbai. 36 pp.



PURNIMA DEVI BARMAN

During the last five or six years, many fallen and injured young ones of Greater Adjutant have been rescued and rehabilitated in the wild when they become capable of looking after themselves

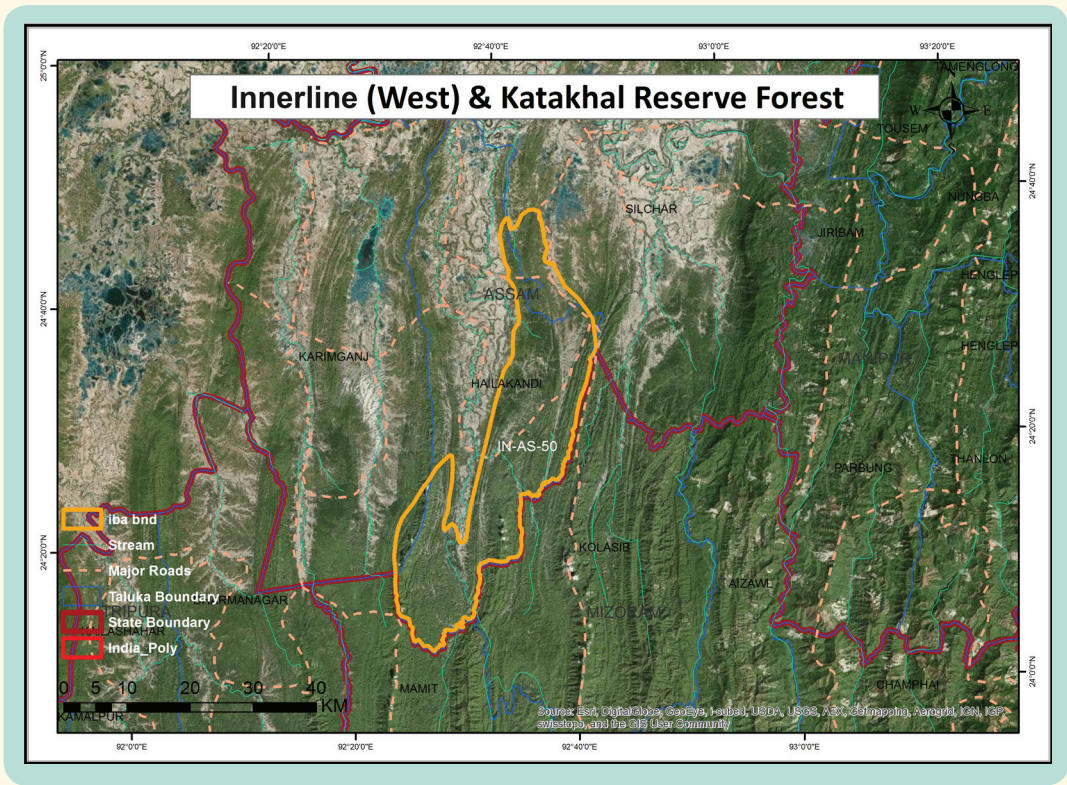
INNERLINE (WEST) & KATAKHAL RESERVE FOREST

IN-AS-50

IBA Site Code	: IN-AS-50	Altitude	: 50–600 msl
Administrative Region (State)	: Assam	Rainfall	: 2,400–3,500 mm
Districts	: Hailakandi, Karimganj	Temperature	: 7 °C to 35 °C
Coordinates	: 24° 10' 51" N, 92° 30' 04" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Wet Evergreen and
Area	: 75,000 ha		Semi- evergreen Forests

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

This site covers parts of Hailakandi district and a small area of Karimganj district in southern Assam, bordering Mizoram. Earlier, it was clumped with Innerline Reserve Forest (IBA IN-AS-20), measuring 130,000 ha, but now it is being treated as a new IBA. The total area of this new IBA is 75,000 ha. The forest consists of mainly Tropical Wet Evergreen and Tropical Semi-evergreen types. There are vast and continuous stretches of bamboo with cane and reeds. There are some small but excellent patches of tropical rain forest on the plains in Innerline RF (West).

AVIFAUNA

A part of Katakhal RF was ornithologically surveyed as far back as the 19th century (Inglis 1896–1910). Some

species have disappeared, while others have become rare since Inglis' time. For example, Masked Finfoot *Heliopais personata* was collected from the northern edge of Innerline RF (BirdLife International 2001), and the specimen is in the American Museum of Natural History, but there is no recent record. The Purple Wood Pigeon or Pale-capped Pigeon *Columbia punicea*, now a Vulnerable species, was recorded by Inglis (1896–1910). It could still be found, along with the globally Threatened White-winged Duck *Asarcornis scutulata*. Spot-billed Pelican *Pelecanus philippensis* was also recorded from the fringe of Katakhal RF, but there is no recent report. Swamp Francolin *Francolinus gularis* has perhaps vanished from the area due to encroachment on its grassland habitat for cultivation. During his various visits, Anwaruddin Choudhury listed about 25 species from this

CRITICALLY ENDANGERED	
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
ENDANGERED	
White-winged Duck	<i>Asarcornis scutulata</i>
VULNERABLE	
Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pale-capped Pigeon	<i>Columbia punicea</i>
NEAR THREATENED	
Spot-billed Pelican (no recent record)	<i>Pelecanus philippensis</i>
Blyth's Kingfisher	<i>Alcedo hercules</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

IBA. Occasionally, White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* are seen, but nesting colonies have not been discovered.

The site lies in Biome 9 (Indo-Chinese Tropical Moist Forest). Some major species of this biome are seen here, namely Lesser Necklaced Laughingthrush *Garrulax monileger*, Black-gorgeted Laughingthrush *G. pectoralis*, and Rufous-necked Laughingthrush *G. ruficollis*.

During winter, many birds of other biomes, such as Biome 7 (Sino-Himalayan Temperate Forest) and Biome 8 (Sino-Himalayan Subtropical Forest), move in. Notable forest birds are Grey-bellied Tesia *Tesia cyaniventer*, Blyth's Kingfisher

Alcedo hercules, Blue-throated Barbet *Megalaima asiatica*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckooshrike *Coracina melaschistos*, Short-billed Minivet *Pericrocotus brevirostris*, White-throated Bulbul *Alophoixus flaveolus*, Black Bulbul *Hypsipetes leucocephalus*, and Grey Peacock-pheasant *Polyplectron bicalcaratum*.

OTHER KEY FAUNA

This IBA site has the highest primate diversity in Assam with eight species (Choudhury 1989, 2013), namely Slow Loris *Nycticebus bengalensis*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Stump-tailed Macaque *M. arctoides*, Assamese Macaque *M. assamensis*, Capped Langur *Trachypithecus pileatus*, Phayre's Leaf Monkey *T. phayrei*, and Hoolock Gibbon *Hoolock hoolock*. Other fauna include Asiatic Elephant *Elephas maximus*, Sloth Bear *Melursus ursinus* (probably extirpated), Himalayan Black Bear *Ursus thibetanus*, Malayan Sun Bear *Helarctos malayanus*, Tiger *Panthera tigris*, Leopard *P. pardus*, Clouded Leopard *Neofelis nebulosa*, Sambar *Rusa unicolor*, Hog Deer *Axis porcinus*, Barking Deer *Muntiacus muntjak*, Red Serow *Capricornis rubidus*, and Gaur *Bos gaurus* (almost extirpated). The Ganges River Dolphin



DHRITIMAN MUKHERJEE

There are excellent patches of tropical rain forest in this IBA

Platanista gangetica occurs during monsoon in Dhaleswari and Katakhal rivers. There are historic records of the Sumatran Rhinoceros *Dicerorhinus sumatrensis* and Wild Water Buffalo *Bubalus arnee* (= *bubalis*) (Choudhury 1997, 2001). Among reptiles, there are past records of the Gharial *Gavialis gangeticus*. Turtles recorded include the Keeled Box *Pyxidea mouhotii* and Eastern Hill or Asian Brown Tortoise *Manouria emys*. Burmese Rock Python *Python molurus* is common, however, the reports of Reticulated Python *P. reticulatus* need further confirmation. King Cobra *Ophiophagus hannah* and other snakes also abound.

LAND USE

- Forest
- Agriculture
- *Jhum* cultivation

THREATS AND CONSERVATION ISSUES

- Encroachment
- Deforestation
- Unsustainable bamboo harvesting

The site is under heavy biotic pressure, including encroachment, felling of trees, and large-scale, unscientific harvesting of bamboo for paper mills. Poaching, often across the Mizoram border, is also a major issue.

This site has tropical rainforest, identified as Cachar Type by Champion & Seth (1968), which forms one of the largest surviving contiguous belts of reserve forests in the state (Choudhury 1993). This area has been strongly recommended as a national park (Choudhury 1989) or a sanctuary (Choudhury 1983). The forests are still unprotected, despite being extremely rich in biological wealth. In 1983, a memorandum was submitted to the Government of Assam to declare it as a wildlife sanctuary, but not much has happened over the last 30 years. The proposed sanctuary or national park would cover Innerline RF (whole), Katakhal RF (whole),

Barak RF (whole), Dohaila RF (part), Longai RF (part), and Tilbhum RF (part). In addition to the reserve forests, a small portion of unclassified state forest areas north of Shingla RF and the areas adjoining Innerline RF, should also be included. The estimated area of the reserve or sanctuary would be c. 167,000 ha, with provision for future expansion (Choudhury 1993). Since this plan was submitted, about 60,000 ha has been encroached. In order to prevent further encroachment, it is absolutely essential that the remaining forest be legally protected soon.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- BirdLife International (2001) *Threatened Birds of Asia: The BirdLife International Red Data Book*. BirdLife International, Cambridge, UK.
- Champion, H.G. and Seth, S.K. (1968) *A Revised Survey of Forest Types of India*, Govt. of India Press, Delhi. Pp. 403.
- Choudhury, A.U. (1983) Plea for a new wildlife refuge in eastern India. *Tigerpaper* 10(4): 12–15..
- Choudhury, A.U. (1989) Primates of Assam: their distribution, habitat and status. Ph.D. Thesis. Gauhati University, Guwahati.
- Choudhury, A.U. (1993) Potential Biosphere Reserves in Assam (India). *Tigerpaper* 20(1): 2–8.
- Choudhury, A.U. (1997) The status of the Sumatran rhinoceros in north-eastern India. *Oryx* 31(2): 151–152.
- Choudhury, A.U. (2000) *The Birds of Assam*. Gibbon Books & WWF-India NE Region, Guwahati. Pp. 240.
- Choudhury, A.U. (2001) On the occurrence of the wild water buffalo *Bubalus arnee* in the Barak Valley districts of Assam. *JBNHS* 98(2): 270–271.
- Choudhury, A.U. (2013) *The Mammals of North East India*. Gibbon Books & The Rhino Foundation with support from COA, Taiwan, Guwahati. 432 pp.
- Inglis, C. (1896–1910) List of birds collected during 5 years' residence in Hylakandy district of Cachar, 8 parts. *JBNHS* 10–13:

KRUNGMING RESERVE FOREST, KHORONGMA & KOPILI-UMRANGSU RESERVOIRS

IN-AS-51

IBA Site Code	: IN-AS-51
Administrative Region (State)	: Assam
District	: Dima Hasao (North Cachar Hills)
Coordinates	: 25° 30' N, 91° 41' E
Ownership	: State (Autonomous Council), Community

Area	: 15,000 ha
Altitude	: 300–800 msl
Rainfall	: >1,500 mm
Temperature	: 5 °C to 35 °C
Biogeographic Zone	: Northeast
Habitats	: Forest, Wetland

IBA CRITERIA : A1 (Threatened species), A4ii (>1% of global population of congregatory terrestrial species)

PROTECTION STATUS : Not officially protected. Map not available.

GENERAL DESCRIPTION

This area was identified during a survey for potential IBA sites (Choudhury 2011). Krungming and Khorongma are contiguous forest areas comprising Semi-evergreen and Deciduous forest patches, degraded owing to tree felling and construction of two large reservoirs. These are Kopili (900 ha, some areas in Meghalaya) and Umrangsu (330 ha), forming part of Kopili Hydroelectric Project. Krungming is a reserve forest, so it is better protected. There are some settlements and *jhum* cultivation in Khorongma area. This site is near the Assam-Meghalaya border. The terrain is hilly and undulating, forming part of an Archaean plateau.

AVIFAUNA

The area is a potential habitat for occasional White-bellied Heron *Ardea insignis* and White-winged Duck *Asarcornis scutulata*. However, a detailed avian inventory is yet to be made. Owing to longstanding insurgency problems, field work was difficult during the last decade. Near Threatened birds recorded in the area are Great Pied Hornbill *Buceros bicornis* and Oriental Darter *Anhinga melanogaster*. The reservoirs attract a large number of wintering waterfowl, but no census has been done. There is a large congregation of several thousand migrating Amur Falcon *Falco amurensis*

in the area, especially in and around Timbung village (A.U. Choudhury, *pers. comm.* 2014). Although many globally Threatened species have been recorded, they are not found regularly or in significant numbers, so it is difficult to identify this site based on A1 criteria. But, if we consider A4ii criteria (>1% of the global population of a congregatory terrestrial species), the site would qualify as an IBA. We are, therefore, including as an IBA and suggest further studies confirm its status.

OTHER KEY FAUNA

Asiatic Elephant *Elephas maximus*, Gaur *Bos gaurus*, and Western Hoolock Gibbon *Hoolock hoolock* are some of the noteworthy mammals found in the area (Choudhury 2013).

LAND USE

- Forest area
- Power projects with accommodation for personnel and road network

THREATS AND CONSERVATION ISSUES

- Encroachment
- Poaching
- Tree felling

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- Choudhury, A.U. (2011) Identification of potential IBAs in Assam. Final Report to Indian Bird Conservation Network, BNHS, Mumbai. 36 pp.
- Choudhury, A.U. (2013) *The Mammals of North East India*. Gibbon Books & The Rhino Foundation with support from COA, Taiwan, Guwahati. 432 pp.

CRITICALLY ENDANGERED

White-rumped Vulture (no recent record) *Gyps bengalensis*
Red-headed Vulture (no recent record) *Aegypius calvus*

NEAR THREATENED

Oriental Darter *Anhinga melanogaster*
River Lapwing *Vanellus duvaucelii*
River Tern *Sterna aurantia*
Great Pied Hornbill *Buceros bicornis*

CONGREGATORY SPECIES

Amur Falcon *Falco amurensis*

MAGURI AND MOTAPUNG BEELS

IN-AS-52

IBA Site Code	: IN-AS-52
Administrative Region (State)	: Assam
District	: Tinsukia
Coordinates	: 27° 41' 24" N, 95° 21' 00" E
Ownership	: State
Area	: 1,000 ha

Altitude	: 90–100 msl
Rainfall	: 2,300–3,600 mm
Temperature	: 6 °C to 36 °C
Biogeographic Zone	: Northeast
Habitats	: Marshes, Lakes, Tropical Grassland

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS : Not officially protected. Map not available

GENERAL DESCRIPTION

This IBA was part of a complex covering Dibru-Saikhowa National Park and adjacent areas. However, in recent years, Maguri and Motapung Beels (lakes) have proved to be significant with a number of important records. The *beel* complex is 12 km north of Tinsukia town. It is known as a major haunt of the globally Threatened Marsh Babbler *Pellorneum palustre*, with recent records of Lesser White-fronted Goose *Anser erythropus*, Baikal Teal *Anas formosa* and White-bellied Heron *Ardea insignis*.

In 1986, the Government of Assam declared Dibru and Saikhowa Reserve Forests as Dibru-Saikhowa Wildlife Sanctuary, but Maguri and Motapung Beels, though very important for the conservation of waterfowl, were excluded.

Maguri and Motapung are a complex of *beels* (oxbow lakes), fringed with wide marshes, water channels, and tall to medium grassland. Most of the tourists visiting Dibru-Saikhowa also tour this site to easily spot several rarities.

AVIFAUNA

Maguri-Motapung area is very rich in birdlife, especially marsh birds and waterbirds. The two Critically Endangered *Gyps* species of vultures were not uncommon during 1992–1994, but now both are very rare. However, Baer's Pochard *Aythya baeri*, another Critically Endangered species, is a regular winter visitor, although in small numbers. The Endangered White-winged Duck *Asarcornis scutulata* is an occasional species in the area. Recent sightings of a lone Lesser White-fronted Goose *Anser erythropus* since 2008 (A.U. Choudhury, R.K. Das, & N. Gohain, *pers. comm.*; photographs in OBC images), the second record in the Northeast, has enhanced the importance of this site. Another duck, which is relatively rare in India with few records, the Baikal Teal *Anas formosa*, is also regularly sighted and photographed in the site.

According to Dhritiman Mukherjee (*pers. comm.* 2014), nearly 15,000 waterfowl are found at the peak of winter, but more birds could be using these wetlands during the year. Proper monitoring of the site is required.

Among Critically Endangered species, White-rumped *Gyps bengalensis*, Slender-billed *G. tenuirostris*, and Red-headed *Aegypius calvus* Vultures are occasionally found in the surrounding areas, particularly in Dibru-Saikhowa National Park nearby. Similarly, the Bengal Florican *Houbaropsis bengalensis* is occasionally found in short grassland, but all these species do not have significant populations at this site.

However, the tall wet grasslands are important for many Threatened and non-threatened species. Stattersfield *et al.* (1998) have identified three endemic species in the Assam Plains Endemic Bird Area (EBA 131): Manipur Bush-quail *Perdica manipurensis*, Black-breasted Parrotbill *Paradoxornis flavirostris*, and Marsh Babbler *Pellorneum palustre*. The first species is historically not found in the floodplains of the Brahmaputra, but the remaining two



A number of rarities have been found in this IBA including Baikal Teal *Siberionetta* (= *Anas*) *formosa*. Baikal Teal is sporadic winter visitor in India with nearly 30 records

DHRITIMAN MUKHERJEE



Maguri and Motapung Beels are old oxbow lakes close to Dibru-Saikhowa National Park (IBA). The lakes attract thousands of waterfowl, making the whole area extremely important for waterbirds and birdwatchers

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardia insignis</i>
White-rumped Vulture (rare)	<i>Gyps bengalensis</i>
Slender-billed Vulture (rare)	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Baer's Pochard	<i>Aythya baeri</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Greater Adjutant	<i>Leptoptilos dubius</i>
------------------	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Swamp Francolin	<i>Francolinus gularis</i>
Marsh Babbler	<i>Pellorneum palustre</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>

NEAR THREATENED

Spot-billed Pelican	<i>Pelecanus philippensis</i>
Oriental Darter	<i>Anhinga melanogaster</i>
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Grey-headed Fish-eagle	<i>Ichthyophaga ichthyaeus</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Black-breasted Parrotbill	<i>Paradoxornis flavirostris</i>
Marsh Babbler	<i>Pellorneum palustre</i>

endemics are found in this site. Black-breasted Parrotbill is rarely seen, but Marsh Babbler is frequent in the area. Jerdon's Babbler *Chrysomma altirostre*, a Vulnerable species of tall wet grasslands, is also seen. So is the case of Swamp *Prinia cinerascens*.

OTHER KEY FAUNA

Other fauna includes Hog Deer *Axis porcinus* (now rare),

Ganges River Dolphin *Platanista gangetica* (during high floods), Bengal Monitor Lizards *Varanus bengalensis* and Asian Water Monitor *V. salvator*, various turtles, snakes including Indian Cobra *Naja kouthia* and Indian Rock Python *Python molurus*.

LAND USE

- Fishing

THREATS AND CONSERVATION ISSUES

- Erosion
- Poisoning of waterbodies
- Cattle grazing
- Disturbance to birds
- Firewood and grass collection
- Oil pipeline

The main conservation issue is the proposed laying of an oil pipeline through the area. Fishing activities cause considerable disturbance, and there is heavy grazing pressure from domestic livestock. The peripheral areas are being reclaimed for agriculture. Local people sometimes use chemical pesticides for fishing.

KEY CONTRIBUTORS

Anwaruddin Choudhury, Dhritiman Mukherjee, Mohammad Imran.

KEY REFERENCES

Stattersfield, A.J., Crosby, M.J., Long, A.J., and Wege, D.C. (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*. BirdLife Conservation Series No. 7. BirdLife International, Cambridge, UK. Pp. 846.

MANAS RESERVE FOREST

IN-AS-53

IBA Site Code	: IN-AS-53	Altitude	: 50–250 msl
Administrative Region	: Assam	Rainfall	: 2,000–3,000 mm
(State)		Temperature	: 7 °C to 37 °C
District	: Chirang	Biogeographic Zone	: Northeast
Coordinates	: 26° 40'–50' N, 90° 10'–48' E	Habitats	: Tropical Moist Deciduous Forest, Tropical Semi-evergreen Forest, Tropical Grassland, Riverine Vegetation
Ownership	: State		
Area	: 30,000 ha		

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 131: Assam Plains)

PROTECTION STATUS : Unprotected (proposed first addition to Manas National Park). Map not available.

GENERAL DESCRIPTION

This area was identified during a survey for potential IBA sites (Choudhury 2011). Manas Reserve Forest is located to the west of the famous Manas National Park and World Heritage Site. Situated at the foot of the eastern Himalaya, it consists of a generally flat, gently sloping plain area, and low hill slopes towards the north, along the India-Bhutan international boundary. The area has the largest unprotected elephant grassland in the whole of northeastern India (more than 150 sq. km). The forest area comprises Semi-evergreen type with Deciduous Forest interspersed with grassland. The total area of this reserve forest is 349.6 sq. km. Encroached areas have been excluded from proposed IBA.

AVIFAUNA

The area has potential habitats of the Critically Endangered Bengal Florican *Houbaropsis bengalensis*. Although not seen by Namita Brahma (*pers. comm.* 2014) during her visit in December 2009–January 2010, the forest staff who are familiar with the species (having seen it in Manas NP) reported sighting it as recently as 2010. There is a recent record of another Critically Endangered bird, the White-bellied Heron *Ardea insignis* from Koila Moila area in the reserve, where one bird was rescued and then released in 2007. The site of rediscovery of the Manipur Bush-quail *Perdica manipurens* in 2006 is within 2 km of the eastern boundary of Manas RF, with contiguous grassland (Choudhury 2006). Hence, it has great potential for this species as well. The Near Threatened Great Pied Hornbill *Buceros bicornis* was recorded in this area. It is still commonly seen along the northern foothills.

Although there are no specific records of the Critically Endangered White-rumped Vulture *Gyps bengalensis*, Slender-billed Vulture *G. tenuirostris*, and Red-headed Vulture *Aegypius calvus* from Manas Reserve Forest

(as not much has been done here), they are found in the adjoining Manas National Park and other adjoining reserve forests.

OTHER KEY FAUNA

Like Manas NP, this reserve forest is also very rich in mammalian fauna. The Asiatic Elephant *Elephas maximus*, Golden Langur *Trachypithecus geei*, Tiger *Panthera tigris*, Pygmy Hog *Porcula salvanius*, Gaur *Bos gaurus*, Wild Water Buffalo *Bubalus arnee*, and Clouded Leopard *Neofelis*

CRITICALLY ENDANGERED

White-bellied Heron	<i>Ardea insignis</i>
White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>
Bengal Florican	<i>Houbaropsis bengalensis</i>

ENDANGERED

Manipur Bush-quail (no record but likely)	<i>Perdica manipurens</i>
--	---------------------------

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Swamp Francolin	<i>Francolinus gularis</i>
Jerdon's Babbler	<i>Chrysomma altirostre</i>
Slender-billed Babbler	<i>Turdoides longirostris</i>
Yellow Weaver	<i>Ploceus megarhynchus</i>

NEAR THREATENED

Great Thick-knee	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>
Great Pied Hornbill	<i>Buceros bicornis</i>

ENDEMIC BIRD AREA 131: ASSAM PLAINS

Manipur Bush-quail (no record but likely)	<i>Perdica manipurens</i>
--	---------------------------



DHRITIMAN MUKHERJEE

Manas Reserve Forest is potential habitat for Bengal Florican *Houbaropsis bengalensis* and White-bellied Heron *Ardea insignis*

nebulosa are some of the noteworthy mammals found in the area.

In Manas NP, Monsoon Jyoti Gogoi (*in litt.* 2014) identified 165 butterfly species and believes that more than 200 species are likely to occur. As this IBA adjoins Manas NP, similar butterfly fauna is likely to occur. The major species identified are Yellow Gorgon *Meandrusa payeni*, Bath White *Pantoporia daplidice*, the scarce Tawny Rajah *Charaxes aristogiton*, Dark Evening Brown *Melanitis phedima*, and the Whiteline Bushbrown *Mycalesis malsara*, which is restricted to Manas Biosphere Reserve in Assam. Other noteworthy species are Indian Cupid *Everes lacturnus*, Pallid Royal *Tajuria albiplaga*, Frosted Oakblue *Arhopala dispar*, Spotted Angle *Caprona agama*, Atkinson's Bob *Arnetta atkinsoni*, Awlking *Choaspes xanthopogon*, and the Mussoorie Bush Bob *Pedesta masuriensis*, which has not been sighted at such a low elevation in northeast India outside of Manas.

LAND USE

- Forest

- Grassland
- Degraded forest

THREATS AND CONSERVATION ISSUES

- Poaching
- Grass collection
- Tree felling
- Grazing
- Insurgency
- Collection of boulders and stones
- Human-wildlife conflict

KEY CONTRIBUTORS

Anwaruddin Choudhury, Namita Brahma, Bibhuti P. Lahkar.

KEY REFERENCES

- Choudhury, A.U. (2006) Rediscovery of Manipur Bush-Quail *Perdica manipurens*. *Mistnet* 7(2): 15–16.
- Choudhury, A.U. (2011) Identification of potential IBAs in Assam. Final Report to Indian Bird Conservation Network, Mumbai. 36 pp.

MARAT LONGRI WILDLIFE SANCTUARY

IN-AS-54

IBA Site Code	: IN-AS-54	Altitude	: 100–500 msl
Administrative Region (State)	: Assam	Rainfall	: <800–1,500 mm
District	: Karbi Anglong	Temperature	: 7 °C to 34 °C
Coordinates	: 25° 47' 58" N, 93° 01' 27" E	Biogeographic Zone	: Northeast
Ownership	: State	Habitats	: Tropical Moist Deciduous Forest, Tropical Semi-evergreen Forest
Area	: 45,100 ha		

IBA CRITERIA : A1 (Threatened species)

PROTECTION STATUS : Wildlife Sanctuary, established 2003. Map not available.

GENERAL DESCRIPTION

This site includes Marat Longri Wildlife Sanctuary (45,100 ha) in Karbi Anglong district of central Assam. A part of this area, along with Dhansiri Reserve Forest, was proposed as a tiger reserve (Choudhury 1998). It is already part of Dhansiri-Lungding Elephant Reserve which was notified in 2003. Marat Longri WLS includes four reserve forests: Disama, Kaki (in Karbi Anglong), Inglongkiri, and Miyungdisa. The area has undulating terrain with low hills, which are part of the Karbi plateau. The Jamuna river marks the northern boundary of Marat Longri WLS. While this river is perennial, most of the smaller streams in the IBA become dry during winter.

The area has a tropical monsoon type climate, with hot and wet summers, and cool, dry winters. This is a relatively low rainfall zone (rain-shadow area) of northeast India. The forest type is Tropical Moist Deciduous and Tropical Semi-evergreen. Abandoned *jhums* (slash-and-burn shifting cultivation) are now covered with various grasses such as *Themeda villosa*, *Saccharum procerum*, *Imperata cylindrica*, *Eupatorium odoratum*, and shrubs. Plantations of the Forest Department are mostly Teak *Tectona grandis*, *Gmelina arborea*, and *Albizia procera*.

AVIFAUNA

About 240 species have been recorded during short visits (A.U. Choudhury, *pers. comm.* 2003). White-winged Duck *Asarcornis scutulata* has been recorded in Marat Longri WLS (Choudhury 1993, 2009). Among the hornbills, Oriental Pied *Anthraceros albirostris*, Great Pied *Buceros bicornis*, and Wreathed *Aceros undulatus* are commonly seen. Other birds of interest are White-cheeked Hill-partridge *Arborophila atrogularis*, Grey Peacock-pheasant *Polyplectron bicalcaratum*, Black-backed Forktail *Enicurus immaculatus*, Himalayan Flameback *Dinopium shorii*, Lesser Necklaced Laughingthrush *Garrulax moniligerus*, Black-gorgeted Laughingthrush *G. pectoralis*, Rufous-

necked Laughingthrush *G. ruficollis*, and Sultan Tit *Melanochlora sultanea*. These species represent Biome 9 (Indo-Chinese Tropical Moist Forest).

Many species of other biomes are also seen. Notable among them are Bamboo Partridge *Bambusicola fytchii*, Pied Falconet *Microhierax melanoleucos*, Grey-headed Parakeet *Psittacula finschii*, Asian Emerald Cuckoo *Chrysococcyx maculatus*, Bay Woodpecker *Blythipicus pyrrhotis*, Maroon Oriole *Oriolus traillii*, Black-naped Oriole *O. tenuirostris*, Grey Treepie *Dendrocitta formosae*, Black-winged Cuckoo-shrike *Coracina melaschistos*, White-throated Bulbul *Alophoixus flaveolus*, Grey-winged Blackbird *Turdus bouboul*, and Red-headed Babbler *Stachyris ruficeps*.

OTHER KEY FAUNA

Like all other forest areas of the Northeast, Marat Longri is rich in animal life. Choudhury (1996) reported seven species of primates: Western Hoolock Gibbon *Hoolock hoolock*, Capped Langur *Trachypithecus pileatus*, Rhesus Macaque *Macaca mulatta*, Pig-tailed Macaque *M. nemestrina*, Assamese Macaque *M. assamensis*, Stump-tailed Macaque *M. arctoides*, and Slow Loris *Nycticebus bengalensis*.

This IBA site is an important habitat for the Asiatic Elephant *Elephas maximus* and the area is notified as an Elephant Reserve under Project Elephant. It also harbours two large cats, Tiger *Panthera tigris* and Leopard *P. pardus*, one medium-sized cat Clouded Leopard *Neofelis nebulosa*, and two small cats, Leopard Cat *Prionailurus bengalensis* and Jungle Cat *Felis chaus*, apart from Wild Dog *Cuon alpinus* and Asiatic Black Bear *Ursus thibetanus*. Herbivores include Gaur *Bos gaurus*, Red Serow *Capricornis rubidus*, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, and Malayan Giant Squirrel *Ratufa bicolor*. In the dense parts of the forest, Binturong *Arctictis binturong* is found, but due to its nocturnal nature, it is rarely seen.

Not much is known about the reptilian and amphibian fauna of this site. Choudhury (1993) recorded Keeled Box



DHRITIMAN MUKHERJEE

The forest type in Marat Longri IBA is Tropical Moist Deciduous and Tropical Semi-ever green

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

ENDANGERED

White-winged Duck	<i>Asarcornis scutulata</i>
-------------------	-----------------------------

VULNERABLE

Lesser Adjutant (occasional)	<i>Leptoptilos javanicus</i>
------------------------------	------------------------------

NEAR THREATENED

River Lapwing	<i>Vanellus duvaucelii</i>
Great Pied Hornbill	<i>Buceros bicornis</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
Red-breasted Parakeet	<i>Psittacula alexandri</i>

Turtle *Pyxidea mouhotii* and many common reptiles of Assam forests.

LAND USE

- Forestry
- *Jhum* cultivation

THREATS AND CONSERVATION ISSUES

- Encroachment
- Poaching
- Illegal felling of trees
- Insurgency
- *Jhum* cultivation

Encroachment in the forest was negligible till the mid 1980s. Subsequently, it has happened in some areas,

but large tracts are still free from human disturbance. Although poaching is not yet a major threat, deer, primates, porcupines, large birds, and monitor lizards are sometimes killed for food by the local people.

Illegal felling of trees and insurgency are two major social and conservation issues, which need urgent attention if this area is to be saved. One of the ways to tackle these problems is regulated and culturally sensitive ecotourism. This IBA has great tourism potential because of its easy accessibility. A national highway passes through the northern boundary of Marat Longri WLS, while the southern boundary is largely contiguous with the Diphu-Lumding main road. Silbheta Falls is a popular picnic spot on the Jamuna river in Marat Longri WLS.

KEY CONTRIBUTOR

Anwaruddin Choudhury

KEY REFERENCES

- Choudhury, A.U. (1993) *A Naturalist in Karbi Anglong*. Gibbon Books, Guwahati. Pp. 78.
- Choudhury, A.U. (1996) Survey of primates in some parts of eastern and central Assam. Final Report to ASTEC, Guwahati. 32 pp + maps.
- Choudhury, A.U. (1998) Dhansiri Tiger Reserve. Revised proposal. The Rhino Foundation for nature in NE India, Guwahati. 30 pp + map.
- Choudhury, A.U. (2009) *A Naturalist in Karbi Anglong*. Revised & enlarged 2nd edn. Gibbon Books, Guwahati.

SARESWAR BEEL

IN-AS-55

IBA Site Code : IN-AS-55

Administrative Region : Assam
(State)

District : Kokrajhar

Coordinates : 26° 09' N, 89° 55' E

Ownership : State

Area : 200 ha (160 ha waterbody).

Altitude : 40 msl

Rainfall : >1,500 mm

Temperature : 7 °C to 36 °C

Biogeographic Zone : Northeast

Habitats : Wetland, Marshy floodplain

IBA CRITERIA : A1 (Threatened species), A4iii (>20,000 waterbirds)

PROTECTION STATUS : Not protected. Map not available.

GENERAL DESCRIPTION

This area was identified during a survey for potential IBA sites (Choudhury 2011). It is rather strange that an outstanding wetland like this evaded notice in Islam & Rahmani (2004). Sareswar is a scenic *beel* with *Sal Shorea robusta* forest on two sides. It was formerly in Dhubri district, now in Kokrajhar, and is easily approachable from Gouripur town. Sareswar is in the floodplains of the River Brahmaputra. It has flat terrain with undulating highlands on two sides. Rupshi airport (now disused) is located near

the *beel*. In winter, a large number of waterfowl visit this wetland, sometimes in tens of thousands.

AVIFAUNA

The Critically Endangered White-rumped Vulture *Gyps bengalensis* is still seen occasionally in the area. The Endangered Baer's Pochard *Aythya baeri* occasionally winters in the lake. Vulnerable species recorded are Lesser Adjutant *Leptoptilos javanicus* and Greater Spotted Eagle *Clanga clanga*. Near Threatened Ferruginous Duck



DHIRITMAN MUKHERJEE

This site was identified during a survey in 2011. In winter, sometimes tens of thousands of waterfowl are found in this IBA. However, the site needs immediate protection from encroachment and hunting

DIPTIMAN MUKHERJEE



Besides the Threatened species, Sareswar Beel attracts thousands of common waterbirds such as Lesser Whistling Duck

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Baer's Pochard	<i>Aythya baeri</i>

VULNERABLE

Lesser Adjutant	<i>Leptoptilos javanicus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Ferruginous Duck	<i>Aythya nyroca</i>

Aythya ferruginea occurs in large numbers (766 counted in January, 1991). Other species recorded include Asian Openbill *Anastomus oscitans*. The total number of other commoner ducks normally remains above 5,000 with 10,000+ on some days. In a year, more than 20,000 waterbirds use this wetland, qualifying it for A4iii criteria (the site is known or thought to hold, on a regular basis, >20,000 waterbirds or >10,000 pairs of seabirds of one or more species).

OTHER KEY FAUNA

Golden Jackal *Canis aureus* and Jungle Cat *Felis chaus*

are still met with. Otters (unidentified) also occasionally use this wetland.

LAND USE

- Fishing
- Paddy cultivation

THREATS AND CONSERVATION ISSUES

- Commercial fishing
- Reclamation

KEY CONTRIBUTOR

Anwaruddin Choudhury, Kuladhar Das, Diptiman Zalka.

KEY REFERENCES

- Choudhury, A.U. (2011) Identification of potential IBAs in Assam. Final Report to Indian Bird Conservation Network, BNHS, Mumbai. 36 pp.
- Islam, M.Z. and Rahmani, A.R. (2004). *Important Bird Areas in India: Priority sites for conservation*. IBCN, BNHS, BirdLife International and Oxford University Press, Mumbai. Pp. xvii + 1133.